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THESIS

**SOLUTIONS FOR TOTAL FORCE STRUCTURE
DIVISION'S CONDUCT OF TROOP-TO-TASK ANALYSIS**

by

Danica J. Mottola

March 2010

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**SOLUTIONS FOR TOTAL FORCE STRUCTURE DIVISION'S
CONDUCT OF TROOP-TO-TASK ANALYSIS**

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANPOWER SYSTEMS ANALYSIS

from the

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ABSTRACT

This research was conducted in response to a request by Total Force Structure Division (TFSD), Capabilities Development Directorate (CDD), Marine Corps Combat Development Command (MCCDC) and will serve to provide the TFSD with recommendations for any potential improvements that can be made to the current troop-to-task analysis instructions or the process by which it is conducted. In this context, a troop-to-task analysis is a methodological process of matching the suitable number and quality of personnel and equipment to a unit's Mission Essential Task List (METL) for the purpose of justifying the need for uncompensated force structure. The study finds that the current template will adequately provide a simple but often subjective analysis from the unit requesting uncompensated force structure. If a more thorough analysis is desired or required, recommendations include further development of standardized troop-to-task business rules, the continued use or new development of existing proprietary contractual analytical software, or a restructuring of the current force structure analysis divisions, e.g., conduct third-party troop-to-task analysis vice relying on those provided by the requesting units.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAO	Approved Acquisition Objective
AMA	Analysis of Materiel/Non-Materiel Approaches
ASR	Authorized Strength Report
CBA	Capabilities Based Assessment
CBP	Capabilities Based Planning
CDD	Capabilities Development Directorate
CMC	Commandant of the Marine Corps
COA	Course of Action
DC CD&I	Deputy Commandant for Combat Development & Integration
DoD	Department of Defense
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities
DWG	DOTMLPF Working Group
EFDS	Expeditionary Force Development System
FAA	Functional Area Analysis
FNA	Functional Needs Analysis
FSA	Functional Solutions Analysis
HRDP	Human Resource Development Process
ID	Integration Division
MAGTF	Marine Air-Ground Task Force
MARFOR	Marine Forces
MCBUL	Marine Corps Bulletin

MCCDC	Marine Corps Combat Development Command
MCL	Marine Air Ground Task Force Capabilities List
MCO	Marine Corps Order
MCT	Marine Corps Task
MCTL	Marine Corps Task List
MET	(Core) Mission Essential Task
METL	Mission Essential Task List
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MGL	Marine Air Ground Task Force Gap List
MID -	Marine Air Ground Task Force Integration Division
MOS	Military Occupational Specialty
MRL	Marine Air Ground Task Force Requirements List
MROC	Marine Requirements Oversight Council
NATO	North Atlantic Treaty Organization
OccFld	Occupational Field
POM	Program Objectives Memorandum
POR	Programs of Record
PPBES	Planning, Programming, Budgeting, and Execution System
SCWG	Service Component Working Group
SME	Subject Matter Expertise, or alternately, Subject Matter Expert
SPD	Solution Planning Document
TFSD	Total Force Structure Division

TFSMS	Total Force Structure Management System
TFSP	Total Force Structure Process
TLCM	Total Life-Cycle Management (process)
TO&E	Table of Organization and Equipment
TOECR	Table of Organization and Equipment Change Request
TOPFAS	Tools for Operations Planning Functional Area Services
TTR	Troop-to-Task Rule
UNS	Universal Needs Statement
URB	Uncompensated Review Board
UUNS	Urgent Universal Needs Statement
WAT	Workforce Analysis Tool
WFF	War Fighting Functions

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I. INTRODUCTION

A. PURPOSE

The purpose of this study is to conduct a qualitative analysis of the Marine Corps Total Force Structure Division's troop-to-task analysis process. In order to do this, a thorough examination of the overlapping force structure processes such as Capabilities Based Planning, the Expeditionary Force Development System, Capabilities Based Assessment, and the Total Force Structure Process are also reviewed and examined. The function this study will serve is to provide the leadership within the Total Force Structure Division with recommendations for any potential improvements that can be made to the troop-to-task analysis methodology.

1. Background

The Total Force Structure Division (TFSD) is a branch of the Marine Corps Combat Development Directorate (CDD) at the Marine Corps Combat Development Command (MCCDC) located onboard Marine Corps Base, Quantico, Virginia. According to Marine Corps Order (MCO) 5311.1D, force structure "represents the total requirement for the number of billets and items of equipment necessary to accomplish the Marine Corps Mission Essential Tasks (METs)." One of the many functions of the TFSD is to conduct an annual Uncompensated Review Board (URB), which analyzes and prioritizes all Marine Corps requests for uncompensated force structure. Because the requests come from other sources within the Marine Corps, the URB requires initial methods to review the requests and make determinations as to which are supportable, which are not, and the associated trade-offs. Before the URB conducts its own analyses of each of the requests it receives, it requires the requesting units to conduct a troop-to-task analysis as justification for additional manpower.

Leadership in the TFSD has determined that the troop-to-task analyses that are submitted are often subjective and lacking in the thoroughness of analysis desired. The TFSD does not have the internal capacity to conduct the troop-to-task analyses themselves and must rely on the submissions received. Instructions and a template

developed by the TFSD are provided to requesting units that detail the troop-to-task analysis process; however the TFSD would like to know what, if any, other methodology exists in order to receive the level of analysis they desire.

2. Research Questions

Primary:

- What is the Total Force Structure Division's methodology for conducting a troop-to-task analysis, how is this process working in terms of meeting the Total Force Structure Division's and the Marine Corps needs and requirements, and what are potential improvements?

Secondary:

- What aspects of other troop-to-task analysis solutions in use may be applicable towards improving the Total Force Structure Division's troop-to-task analysis?
- What relationship does the troop-to-task process share with other Marine Corps processes, such as the Human Resource Development Process, Acquisition Process, Expeditionary Force Development Systems, etc?

3. Benefits of the Study

At the very least, the expectation for this thesis is to provide a reference for future manpower systems analysis students when studying the very complex and often convoluted Marine Corps force structure and manpower planning processes that occur within the Marine Corps Combat Development Command. Ideally, this study will also result in a clarification and analysis of the troop-to-task analysis process for the TFSD and provide recommendations for further improvement.

B. RESEARCH METHODS

1. Organizational Systems and Theory Models

The most comprehensive and comprehensible way to describe the troop-to-task analysis methodology is to examine how it is used within the Total Force Structure Process (TFSP) and how both the TFSP and TFSD function as organizational systems using established organizational theory and models. Because both the inputs to and outputs from the TFSP produce Marine Corps wide effects, it is also necessary to examine Marine Corps organizational structures both above and below the TFSP.

Established theorists featured in the discussion are Henry Mintzberg, Nancy Roberts, Davis Nadler and Michael Tushman, and James Thompson.

2. Supporting Methods

The primary sources used for research of the Marine Corps force structure processes were Marine Corps Order (MCO) 5311.1D, Total Force Structure Process, and MCO 3900.15B, Marine Corps Expeditionary Force Development System. Initial background and systems overview were provided through unstructured interviews with TFSD's Director Mr. Kevin Herrmann, Deputy Director Mr. Lonnie Sanders, and Operations Officer Ms. Cynthia Cheek. Further sources of information included Major Bill Ramsey, Major Gregory Wardman, Captain Shawn Sanders, and numerous conversations over a four month span with Major Joel Hoffman. Captain James Rowlett provided copious internal briefs, documents and presentations and Information Technology Specialist, Mr. Chris Leubner provided valuable assistance with Internet conductivity and remote access to the TFSD's Share Point site.

Other valuable sources of information about systems outside the TFSP came from Lieutenant Colonel Albert Moseley, National Plans Branch of the Strategy and Plans Division of Headquarters Marine Corps Plans, Policies, and Operations and instructors Mr. Thomas Washburn and Mr. David Retherford of the Army Force Management School at Fort Belvoir, Virginia.

A number of Web sites such as the Marine Corps' <https://www.mccdc.usmc.mil/> and <http://www.marines.mil/Pages/Default.aspx> as well as the Army's Force Structure Management School at <http://www.afms1.belvoir.army.mil/> provided useful publications and information about organizational structure and doctrine.

C. OVERVIEW OF CHAPTERS

The thesis is structured as follows:

Chapter II: Organizational Theory and Models

This chapter encompasses the literature review and gives descriptions of several different theories and models used in organizational systems and process analysis. It is intended to serve a backdrop by which to refer to in the following chapters.

Chapter III: Overview of the Marine Corps Total Force Structure Process

This chapter describes and examines the overlapping Marine Corps force structure management processes in terms of system inputs, throughputs, and outputs. It also begins the initial discussion of where the troop-to-task analysis fits in and what purpose it serves.

Chapter IV: The Total Force Structure Division's Troop-to-Task Analysis

This chapter describes in depth the methodology used to conduct a troop-to-task analysis, who performs them, and what function they serve in the TFSP.

Chapter V: Analysis

This chapter describes the Marine Corps processes using the theories from Chapter II. It discusses how the TFSD both does and does not fit into the standard organizational theories and how this may affect its operations and efficiency. It also highlights some strengths and weaknesses of the conduct of the TFSD's troop-to-task analysis methodology.

Chapter VI: Summary, Conclusions, and Recommendations

The final chapter frames any policy or process concerns as observations and provides alternative courses of action and recommendations for system/process improvement.

II. ORGANIZATIONAL THEORY AND MODELS

To begin dissecting an organizational system or process, it is necessary to first examine existing organizational theory and models in order to establish a common descriptive language. This chapter provides an overview of Mintzberg's theory of organizational configurations and compositions, helpful in understanding the interplay among an array of environmental and organizational factors. Also described are an organizational Systems model and an additional Configuration Model designed to accommodate public and defense agencies. These models provide generally accepted theoretical foundations needed to analyze complex military and bureaucratic organizations. Additionally, the models and configurations are regularly used in the Graduate School of Business and Public Policy's organizational systems management coursework. The theories discussed in this chapter are then used in the remaining chapters to describe and analyze the various processes that structure and influence the troop-to-task analysis.

A. MINTZBERG'S THEORY OF ORGANIZATIONAL STRUCTURE

Having published 15 books and written over 150 articles, Henry Mintzberg is a prominent forerunner and renowned researcher in business and public sector management and organizational design. As such, his theory of organizational structure is a natural starting point for any organizational process analysis. According to his theory, the basic design of organizations is found within five kinds of organizational configurations, each made up of five parts, and each using one or more of five different mechanisms of coordination.¹

1. The Five Organizational Configurations

Mintzberg claims that "like all phenomena from atoms to stars—the characteristics of organizations fall into natural clusters, or configurations".² If these

¹ Henry Mintzberg, <http://www.mintzberg.org/about.htm> (accessed 12 January 2010).

² Henry Mintzberg, "Organizational design: fashion or fit?," *Harvard Business Review* 59, no. 1 (1981): 103.

clusters of characteristics do not fit the actual structure and function of the organization, the organization may fail to ‘cohere’ or operate with optimal efficiency. The basic configuration determines which of the five components and five coordination mechanisms interact with various *situational* elements, e.g., age and size, technical system, environment, and power.³ The five basic configurations are:

a. Simple Structure

As the name suggests, this is the simplest and least complicated of the forms. Typical of enterprising young entrepreneurial companies, these organizations are characterized by a loose division of labor, an informal decision making process where power is centralized by a single individual, and a dynamic environment in which each player is able to fully comprehend the roles of the other players.

b. Machine Bureaucracy

This organizational configuration is a natural offspring of the Industrial Revolution and mass production firms, such as factories, auto, airline and postal industries, and fast-food conglomerates. McDonalds is run like a machine with codified rules for storing, preparing, and cooking its products, thereby ensuring consistency and predictability of product and service worldwide. Because this type of configuration depends on the standardization of work processes, there tends to be a sharp distinction between line and staff, with a fairly linear and formal chain of authority permeated by strict rules and regulations, e.g., military organizations can be described as highly programmed, well-oiled machines.

c. Professional Bureaucracy

Large, complex, and stable like a machine bureaucracy, but much more decentralized due to professionals at the working core. The professional bureaucracy places less emphasis on direct lines of supervision in favor of a more democratic,

³ Henry Mintzberg, "Structure in 5's: A Synthesis of the Research on Organizational Design." *Management Science* 26, no. 3 (1980): 322–339.

autonomous, and self-administering arrangement. Outputs are predominately the results of professionals who obtained their skills elsewhere, e.g., doctors in hospitals and/or professors in universities. A distinction of this configuration is that one cannot manage professionals like machines. These are often highly skilled people who must be given considerable control over their own work, i.e., the organization surrenders a good deal of its power to the professional themselves, and also to the associations and institutions that select and train them. This configuration can also be applicable to craft production and social work firms. Note that many fields attempt to professionalize and thereby gain the considerable benefits of autonomy and a minuscule need to be supervised, e.g., military officer and senior enlisted groups, engineers, accountants, etc.

d. Divisionalized Form

This is when a centralized headquarters oversees a mostly autonomous set of divisions. There is typically little interdependence or coordination between the divisions, thus the primary concern is product control between them. Often the divisions are so independent as to each create their own mini-configuration. This configuration is seen in the largest of corporations, essentially overgrown machine bureaucracies that produce a diverse array of products and/or services or serve a number of different markets.

e. Adhocracy

Adhocracy is the least formal configuration, serving complex yet very dynamic organizations, often through the work of interacting project teams. It requires a level of sophisticated decentralization that defies formal management styles in favor of working groups and creative brainstorming. This form is a relatively recent, in vogue, phenomenon that often gives way to a more formalized structure as the organization ages. In these configurations, “power is constantly shifting and coordination and control are by

mutual adjustment through the informal communication and interaction of competent experts.”⁴ This configuration includes the film industry and even the central aspects of guerrilla warfare.

2. The Five Basic Components

These are the “parts” of an organization, shown in Figure 1. The purpose of each of these is to provide a division of labor and describe who performs what kind of work. How an organization utilizes or values each determines what kind of “cluster” that particular organization best describes.

a. Strategic Apex

This is the individual or top management primarily accountable for the oversight of the entire system. The apex tends to be large in machine bureaucracies as leaders pull to centralize decision making, yet small in professional bureaucracies where power resides in the professionals at the operating core.

b. Operating Core

Those workers producing the basic goods and services of the organization comprise the core, be they unskilled labor at McDonalds, or highly skilled professionals in a hospital or university. Again, the operating core tends to be large in machine bureaucracy due to the standardization of work processes.

c. Middle Line

This refers to managers and supervisors who provide lines of control between the strategic apex and the operating core. Again, this component is typically large in a machine bureaucracy, as many managers are needed to handle conflicts between and among the other major components.

⁴ Henry Mintzberg, "Organizational design: fashion or fit?" *Harvard Business Review* 59, no. 1 (1981): 111.

d. Support Staff

This is the group or groups of staff that provide indirect support to the rest of the organization, such as payroll, human resources, the mailroom, etc. Both machine and professional bureaucracies would tend to have relatively large support staffs.

e. Technostructure

Analysts who provide direct support in the form of formal planning and control of the work of others. Unlike support staff, the technostructure provides technical oversight and does not usually perform the work themselves. Technocratic controls would be sizable in machine bureaucracies and small in professional bureaucracies: the former to make and enforce many rules and regulations on a large, standardized workforce, and the latter because professionals are skilled people who must be given considerable control over their own work.

As depicted, the strategic apex is the smallest component overseeing the entire system. It is connected directly and sequentially to the middle management and operating core of the organization to depict an uninterrupted chain-of-command in most of the configurations. On the sides, the support staff and technostructure do not have the same direct link, but provide peripheral influence in a more indirect fashion.⁵

⁵ Bradley D. Bruner, "An Organizational Analysis of the Military (Navy) Personnel Plans and Policy Division (N13)," Master's thesis, Naval Postgraduate School, September 1998: 5–7.

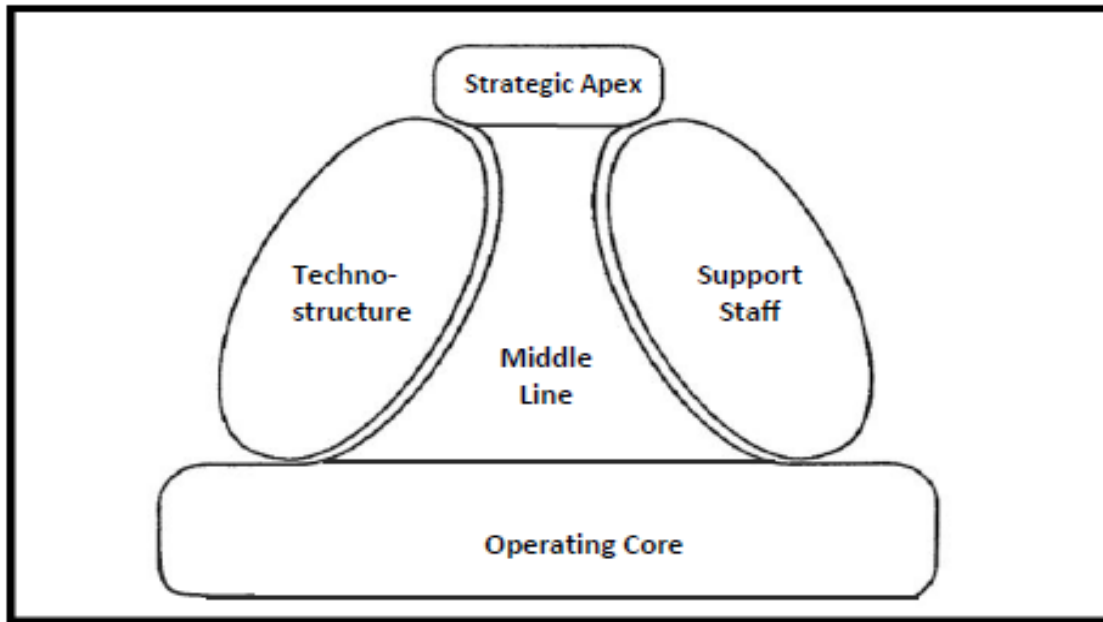


Figure 1. Model of Organizational Components (From Mintzberg, 1980)

3. The Five Mechanisms of Coordination

If the purpose of each of the parts is to accomplish a different kind of work, then it follows that there are also a number of different ways in which this work is coordinated. Mintzberg's rule of fives thus defines five ways in which each of an organization's parts coordinate tasks.⁶ The framework of the five configurations can help managers understand how their different parts are organized and fit together—or refuse to. The point is that leaders and managers can improve their organizational designs by considering the different pulls their organizations experience and the configurations toward which they are drawn. Another point is not which configuration one has; rather, it is that one achieves configuration. Mintzberg clarifies by writing that “we would do better to spend our time trying not to convert our machine bureaucracies into something else but to ensure that they work effectively as the bureaucracies they are meant to be.”⁷

⁶ Henry Mintzberg, "Structure in 5's: A Synthesis of the Research on Organizational Design." *Management Science* 26, no. 3 (1980).

⁷ Henry Mintzberg, "Organizational design: fashion or fit?" *Harvard Business Review* 59, no. 1 (1981): 114.

a. Direct Supervision

One person directs the tasks and takes responsibility for the work of those who are receiving the tasking, i.e., the pull to centralize by top management. An example of this is how a unit's commanding officer provides centralization by directing orders down the chain of command.

b. Standardization of Work Processes

The coordination of work is not done by any one individual, but under an established set of rules or guidelines, typically imposed by the technostucture, i.e., the pull to formalize behaviors and processes. Marine Corps mission statements contain a concept of employment which functions in this way by directing and standardizing how that organization is to utilize its personnel and equipment in order to accomplish the assigned mission.

c. Standardization of Outputs

Similar to the standardization of work processes by the technostucture, but instead of coordination of process, the coordination is at the end product through specific product performance measures. Mission statements, and to some extent the Military Occupational Specialty (MOS) Manual, function as a standardization of outputs by the use of descriptions of what the finished product, i.e., mission success or a fully trained individual "looks like."

d. Standardization of Skills

Instead of an imposition of external measures, coordination is through the standardized training of workers and typically internalized prior to the work beginning. The Marine Corps MOS schools serve the purpose of provided a common standardization of specific skill sets to all Marines prior to their first Fleet assignment. This is intended to develop the common educational and technical background needed to function in that occupational field.

e. *Mutual Adjustment*

This occurs when workers coordinate their own work, usually through internal informal communication. Working groups often function in this way once the initial goal or task has been assigned.

To summarize, the central purpose of structure is to coordinate the work divided in a number of ways. How that coordination is accomplished, by whom and with what, dictates what the organization will look like. Based on which mechanisms of coordination an organization practices and the environmental situation it finds itself in, the essential element is extent of fit. The configuration construct means that all the elements interact in a system, not causing another, instead, all influencing each other interactively. It is reasonable that an organizational structure naturally evolves over time based on many variables. But an organization cannot be all things to all people. “When managers and organizational designers try to mix and match the elements of different ones (configurations), they may emerge with a misfit that, like an ill-cut piece of clothing, won’t wear very well.”⁸ A simplified table describing these differences appears in Table 1.

Structural Configuration	Prime Coordinating Mechanism	Key Part of Organization	Type of Control
Simple Structure	Direct Supervision	Strategic Apex	Vertical and horizontal centralization
Machine Bureaucracy	Standardization of work processes	Technostructure	Limited horizontal decentralization
Professional Bureaucracy	Standardization of skills	Operating Core	Vertical and horizontal decentralization
Divisionalized Form	Standardization of outputs	Middle Line	Limited vertical decentralization
Adhocracy	Mutual adjustment	Support staff or operating core	Selective decentralization

Table 1. Summary of Mintzberg’s Organizational Structure Theory (From Bruner, 1998)

⁸ Henry Mintzberg, "Organizational design: fashion or fit?" *Harvard Business Review* 59, no. 1 (1981): 103.

B. SYSTEMS MODELS

Mintzberg's model of an organization's five basic components combines several theories into configurations as abstract ideals or simplifications of the complex world of structure, leading to how an organization is structured internally. This theory provides a set of tools with which to describe how the parts of an organization interact and coordinate with each other. These are also configurations of *situation* as well as structure, e.g., age and size, technical system, environment and power. What the theory is really saying is that *harmony among important parts or components may be the key to organizational success*, i.e., consistency and congruence are what matters most. Because any troop-to-task analysis is heavily influenced by the surrounding environment, it is important to extend the configuration vocabulary to include organizational systems theory. Both contain the same central hypothesis: The fit of the components determines performance.

This section describes organizations through the use of a systems model framework. While several variations exist, this discussion will focus on two: one of the original Congruence models from Nadler and Tushman, and the specific Organizational Systems Framework designed by Nancy Roberts, and taught at the Naval Postgraduate School.

1. Characteristics of Systems Models

Thinking of an organization as a system allows for further examination of the dynamic flow of environmental factors through the organization and the resulting influence back on the environment. Nadler and Tushman define a system as “a set of interrelated elements”. As one element changes, it has numerous effects on all the other elements. According to systems theory, an open system takes environmental influences as *inputs*, does something with these influences during a *throughput* stage, and then puts products back into the environment as *outputs*. Because any troop-to-task analysis is instigated by external forces and produces outputs that then go back to affecting the

organization and the external environment, the process can be considered an open system where feedback loops further influence the system. Nadler and Tushman detail a few other basic open system characteristics⁹:

a. Internal Interdependence

The parts of a system are interconnected. This characteristic describes how change in one component or subcomponent of a system of an organizational system affects other components or subcomponents.

b. Capacity for Feedback

Systems have the potential to use information about the outputs to go back and control the direction of the system. Just because organizations have this capacity however, does not mean that they use it to self-correct problems or inefficiencies.

c. Equilibrium

Systems constantly strive towards balance, or equilibrium. If an action or event puts an organizational system out of balance, the system will try to correct itself back to a balanced state.

d. Equifinality

This characteristic describes how there is no one right way for an open system to organize. Different configurations can independently develop the same end-state, none of which is incorrect.

e. Adaptation

If any open system cannot maintain balance between inputs or outputs, it will become obsolete. Because the environment changes the inputs, an organization exhibits adaptability to these evolving forces.

⁹ David A. Nadler and Michael L., Tushman, "Organization, Congruence, and Effectiveness." *Organizational Dynamics* 9 no. 2 (1980): 35–51.

2. Organizational Systems Framework

Roberts expands the organization systems structure even further. In her model, (Figure 2), she breaks down the inputs, throughputs, and outputs into detailed subsystems and design variables as described below.¹⁰

¹⁰ Bradley D. Bruner, “An Organizational Analysis of the Military (Navy) Personnel Plans and Policy Division (N13),” thesis, Naval Postgraduate School, September 1998: 10–13.

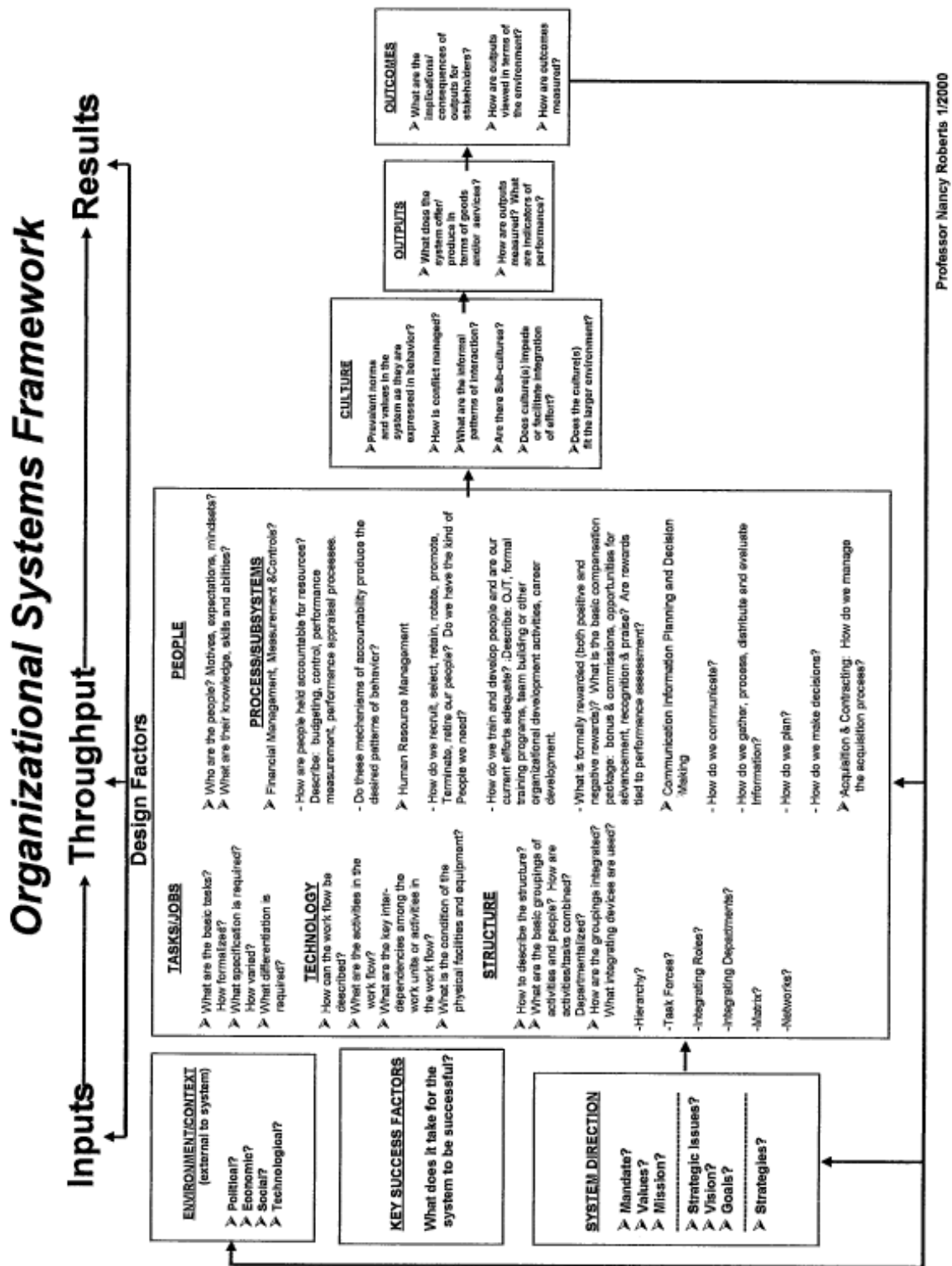


Figure 2. Roberts' Systems Model (From Roberts, 2000)

a. *Inputs*

Context:

Includes all the environmental factors that provide the context within which an organizational system functions. These can include the political, economic, social, and technological environment, the individual history of the organization, and the resources with which the organization can access.

Key success factors:

These are those factors that are needed in order for an organization to be successful. There are readily apparent differences between key success factors of non-profit and government organizations and private business organizations.

System direction:

These are the internal factors that drive an organization; including mission statements, directives, strategies, mandates, visions, and goals.

b. *Design Factors That Perform the Throughputs*

Tasks/Jobs:

These describe the work to actually be performed. Understanding the nature, specification, and differentiation of the work contributes greatly to the comprehension of the tasks to be performed.

Technology:

A tool used in the throughput stage to process inputs into outputs. Includes the physical facilities and equipment, but does not include information systems.

Structure:

Structure includes the divisions, departments, working groups, and hierarchies of an organizational system. Also includes Mintzberg's coordinating mechanisms.

People:

Not only the workers, but also their knowledge, skills, and abilities (KSAs) contribute to a system's design.

Processes:

The necessarily subcomponents and all the tasks they entail, of an organizational system. This includes human resource management, financial management, and the internal communication systems.

Culture:

Culture is the prevalent norms and values that drive an organization. An organization's culture can be both an impediment and/or strength in goal production and mission accomplishment.

c. *Outputs*

Outputs:

What an organization produces in terms of goods and/or services. This also includes the way in which the goods and services produced are measured.

Outcomes:

In addition to goods and services, there are implications and consequences, good or bad, which are projected back onto the environment.

C. THOMPSON'S TYPOLOGY

The final model to be discussed was created by James D. Thompson, another early sociological thinker and forerunner in the study of organizational science. The model describes three kinds of interdependence between components in an organizational system. It then describes three different kinds of coordination that typically occurs for

each kind of interdependence.¹¹ These terms will be important for the description and forthcoming analysis of how the Total Force Structure Division and other key players in the troop-to-task analysis process interact.

1. Interdependence

a. Pooled Interdependence

Occurs in an organization where each of the divisions works independently of one another towards a common goal. The success or failure of one may not directly influence another, but it will influence the organization as a whole. University professors typically have pooled interdependence where some coordination always applies, but each instructor teaches their individual discipline fairly independent of the other disciplines.

b. Sequential Interdependence

Can be like pooled interdependence where divisions work independently, however the distinction is that one division's outputs become another division's inputs. Production lines are an obvious example. Note how the level of interdependence is increasing from pooled.

c. Reciprocal Interdependence

This is exhibited by complete interdependence amongst an organization's divisions. All members in these types of relationships interact on a regular basis with the rest of the organization. This is the most complex of the three, often requiring much greater coordination based on the necessity of high interdependence among relevant players.

¹¹ James D. Thompson, *Organizations and Beyond*, ed. William A. Rushing, Mayer N. Zald (D.C.: Heath and Company, 1976): 41–43.

2. Coordination

a. Standardization

This type of coordination uses a set of rules and regulations by which everyone is expected to follow. It implies a relatively stable and repetitive environment that does not lend often to exceptions.

b. Coordination by Plan

This level of coordination is composed less of rules, but more by schedules that engender further governance. It allows for more dynamic environments by setting guidelines from which to respond.

c. Coordination by Mutual Adjustment

Is the most flexible coordination method and is achieved through continuous interaction and feedback amongst the members. As such, it also requires the most communication capability.

Because of the easily understood parallels, Thompson's typology can be compared to how certain sports teams function and as such is frequently used in business analogies. A simple overview follows in **Table 2** with Thompson's types of coordination inserted for further clarification.

A DIAGNOSTIC CHECKLIST			
	<i>Baseball-Company</i>	<i>Football-Company</i>	<i>Basketball-Company</i>
1. What is the nature (and degree) of task-based interaction among unit members?	Pooled (low).	Sequential (moderate).	Reciprocal (high).
2. What is the geographical distribution of unit members?	Widely dispersed.	Somewhat clustered.	Highly concentrated.
3. Given company objectives and constraints, where does autonomy reside?	Within each unit member.	Above the unit (that is, within unit management).	Among unit members (that is, within the unit as a whole).
4. How is coordination achieved?	Through unit design in which the sum of individual unit members' objectives approximates unit objectives.	Through complex protocols that clearly and tightly specify the roles and responsibilities of each unit member.	Through continuous self-regulation and responsibility sharing among unit members.
Coordination by:	Standardization	Plan	Mutual Adjustment
5. What words best describe unit structure?	Network/conglomerate.	Bureaucratic/mechanistic.	Adhocratic/organic.
6. What sports expression metaphorically sums up the operating management task?	Fill out (revise) the line-up card.	Prepare (execute) the game plan.	Influence the game's flow.

Table 2. Thompson's Typography (From Keidel, 1984)

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III. OVERVIEW OF THE TOTAL FORCE STRUCTURE PROCESS

A. INTRODUCTION

The Total Force Structure Division's mission is as follows:

Total Force Structure Division (TFSD), in conjunction with Advocates, operating forces, and other Marine Corps agencies, develops and maintains the Marine Corps Force Structure, allocates resources to provide a balanced and capable force, and plans and implements future force structure changes in order to build capability-based organizations that accomplish the Marine Corps' mission essential tasks fulfilling its Title 10 requirements.¹²

In order to understand the Total Force Structure Division's troop-to-task analysis process requirements, it is necessary to first examine how the analysis functions within the larger context of the Total Force Structure Process (TFSP) and TFSD's role under the Deputy Commandant of Combat Development and Integration (DC CD&I). Essentially, the TFSP is a subsystem of the Capabilities Based Analysis (CBA), which is a subsystem of the Expeditionary Force Development System (EFDS). These interacting agencies and subcomponents reflect the earlier literature explanation regarding the complexity often surrounding hierarchies of interacting systems, i.e., the inter-relationships among force structure planning, development, and documentation systems. This chapter attempts to clarify the complicated network of products, functions, and responsibilities that flow through the TFSD using Marine Corps Order (MCO) 5311.1D, the DC CD&I's instruction for the TFSP and MCO 3900.15B, the Assistant Commandant of the Marine Corps' instruction to the DC CD&I for the conduct of the Expeditionary Force Development System. The following description is also based on internal service briefs and semi-structured interviews conducted with civilian and military personnel working within the TFSD.

¹² Lonnie Sanders, "TFSD Overview," TFSD Internal Brief, dated 13 September 2008.

B. BACKGROUND AND PARALLEL PLANNING PROCESSES

1. Purpose of the Total Force Structure Process

According to MCO 5311.1D, the Commander's Intent of the Total Force Structure Process is to integrate billet and equipment requirements in order to develop and document force structure for the entire Marine Corps. It further defines force structure as "a representation of the total requirement for the number of billets and items of equipment necessary to accomplish Marine Corps mission essential tasks". In manpower systems analysis terminology, "billet" as used here is synonymous with the term "manpower". Manpower is the personnel *strength* required to operate, train, and maintain a system, also commonly referred to as the "spaces" of an organization. This is not to be confused with the "faces" of an organization, which is the inventory of people with the necessary knowledge, skills, and abilities to fill those spaces. TFSD works strictly with the spaces function of manpower management while other Marine Corps organizations, primarily Marine Corps Headquarters, Manpower and Reserve Affairs (M&RA), function in the role of filling these spaces with the available personnel in addition to their initial recruitment and subsequent management, career progression, et cetera.¹³

2. Integration of Planning Programs

The Department of Defense Instruction 5000.2, Defense Acquisition System Operation, signed 12 May 2003 and the Chairman of the Joint Chiefs of Staff Instruction 3170.01E, Joint Capabilities Integration and Development System, signed 11 May 2005 established the requirement for all service branches of the Department of Defense (DoD) to transition to a Capabilities Based Planning (CBP) process from the previous Requirements Based Planning process. The change was made in order to provide consistency for, and more efficiently allocate, limited resources across all DoD service components.¹⁴ According to these letters of instruction, the new CBP process is to utilize

¹³ Sheryl Fitzgerald, "Manpower 101 Brief," M&RA Internal Brief, 19 March 2009.

¹⁴ Lisa Lorino, "United States Marine Corps' PPBE A Process in Change" GB4053, Graduate School of Business and Public Policy, paper, Naval Postgraduate School, 20 March 2006, 4.

a top-down approach, originating from national and DoD guidance, as shown in the inputs section to the TFSP. In accordance with this new policy, the DC CD&I was tasked to be the Marine Air-Ground Task Force (MAGTF) Integrator and as such, has responsibility for the entire CBP process. The MAGTF Integrator assignment led to a Marine Requirement Oversight Council (MROC) decision in September 2005 that authorized DC CD&I to restructure commands to better support MAGTF integration of USMC war fighting capabilities development. This restructuring in 2005 is the current command structure in use today.¹⁵ See Appendix A for current organizational charts.

Capabilities Based Planning is conducted through the use of the four-phased Expeditionary Force Development System, which is synchronized and run cyclically with the Planning, Programming, Budgeting, and Execution System (PPBES) and the Defense Acquisition System.¹⁶ As the name suggests, the PPBES is also a four-phased planning process; but unlike the more linear nature of the EFDS, its phases run concurrently in a two-year cycle, while simultaneously executing the current fiscal year's budget, defending the following fiscal year's budget, and developing the budget for two fiscal years out. (This means that at any one time, planners are working with at least four years worth of budgeting.) The purpose of the PPBES is to provide each branch of the DoD with a structured decision making budgeting tool that best utilizes their limited fiscal resources while still meeting strategic policies, priorities, and objectives.¹⁷ For the purposes of this study, the programming phase is the only one needing further explanation as it is the primary link between the planning products produced by the EFDS and the Marine Corps' PPBES process.

The programming phase of the PPBES is where programs—the personnel, equipment, and services the Marine Corps needs to meet its strategic objectives—are aligned with the allocation of resources. The product of this phase is the Programming Objective Memorandum (POM), arguably the most important planning document in

¹⁵ MARADMIN 621/05, DC CDI Reorganization.

¹⁶ MCO 5311.1D, Total Force Structure Process, 3.

¹⁷ Douglas Brook, "Introduction to PPBES" GB4053, Graduate School of Business and Public Policy. Naval Postgraduate School, Lecture 6-1, Winter 2009.

military budgeting, that outlines and details the resource allocation for the duration of the next budget cycle for the entire Marine Corps.¹⁸ The entire EFDS process produces the analysis and subsequent planning products that are used in the PPBES programming phase in order to develop the POM. A depiction of how the EFDS cycle aligns with the PPBES is shown in Figure 3.

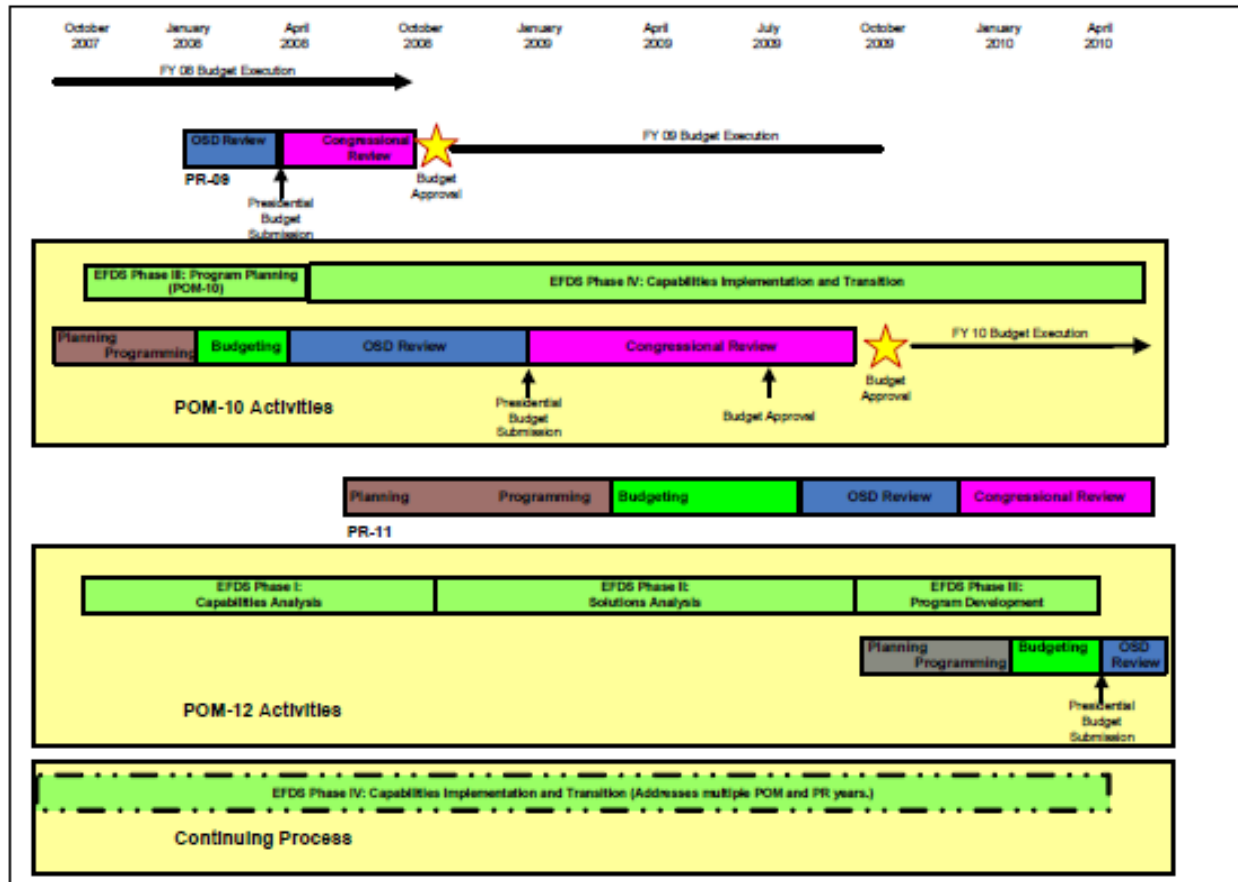


Figure 3. Alignment of the EFDS and PPBES processes (From MCO 3900.15B)

¹⁸ Tiffany Hill, "An Analysis of the Organizational Structures Supporting PPBE within the Military Departments," thesis, Naval Postgraduate School, June 2008.

According to MCO 3900.15B, the Commander's Intent of the EFDS is to facilitate the development and timely delivery of fully integrated war fighting, associated support, and infrastructure non-war fighting capabilities to the operating forces. A brief overview of each phase is as follows:

a. Phase I

The Capabilities Analysis phase is a two-step process that identifies capabilities and associated gaps and excesses in those capabilities at the MAGTF level to be addressed in the next POM. It is conducted by the numerous Integration Divisions, parallel in organizational structure with the TFSD, under the Capabilities Development Directorate (CDD) from October of odd-numbered years until October of even-numbered years with the assistance of various Subject Matter Experts (SMEs). In practice, the first step is a continuous process while the second step is initiated in April and concluded in October of even-numbered calendar years.¹⁹

b. Phase II

The Solutions Analysis phase is a three-step process that provides further in-depth analysis of each of the gaps and excesses identified in Phase I and then identifies possible solutions and recommends solution strategies. Any specific requirements and initiatives that are sufficiently mature enough for funding are identified and prioritized with existing requirements and sent on to Phase III for consideration for POM funding. The timeline for the three sub-phases are October odd-numbered year through January even-numbered year, February through May, and June through August of odd-numbered years.²⁰

c. Phase III

The Program Development phase is the intersection between the EFDS and PPBES processes and links planning with budget in order to develop a fiscally balanced program designed to sufficiently meet Marine Corps capabilities objectives. It

¹⁹ MCO 3900.15B, Enc.1, 1–3.

²⁰ MCO 3900.15B, Enc.2, 1–2.

is during this overlapping of the two program phases that the Warfighting Investment Program Evaluation Board, chaired by the DC CD&I, uses a nine step process with the requirements products developed during Phase II, to develop the Marine Corps POM. The POM is then forwarded to the Commandant for recommendation to the Secretary of the Navy for allocation of all Marine Corps resources. The POM is developed during even-numbered years and encompasses a six-year period. A five-year Program Review is conducted during the odd-numbered years to evaluate the existing programs, their progress, and continued relevance between POM years. It functions as an opportunity to make any timely changes or adjustments to emerging requirements that cannot be delayed until the next POM cycle. POM development is an inter-department joint effort and is executed per the Deputy Commandant for Programs and Resources guidance.²¹

d. Phase IV

The Capabilities Implementation and Transition Phase takes the approved POM and identifies, fields, and transitions it into fully integrated solutions for the operating forces and support elements. POM approved non-material initiatives are developed by the appropriate agency for implementation and approved materiel initiatives are managed by the event-driven Defense Acquisition System. Funding from current year budget resources may also be used if available during this phase.²²

The complexity of both the EFDS and the PPBES is such that a thesis could be written on each. This overview has been provided because there is no simple comprehensive description for what the TFSD does without examining how the TFSP functions within the larger context of Marine Corps capabilities planning, integration, and budgeting. In compliance with the DoD's increasing emphasis on joint capabilities and integration, the entire EFDS process serves as the Marine Corps vehicle for the mandated Capabilities Based Planning per the Joint Capabilities Integration and Development System. The remainder of this planning programs review focuses on a segment of CBP, called the Capabilities Based Assessment (CBA), which is a 24-month process captured

²¹ MCO 3900.15B, Enc. 3, 1–2.

²² MCO 3900.15B, Enc. 4, 1.

specifically during Phases I and II of the EFDS. The CBA functions as the link between the entire EFDS and the TFSP. Because the TFSP uses the same tools developed during the CBA, it is important to understand the connection between their overlapping products and processes. For simplicity, another way to think of the TFSP is as a condensed, more timely and immediate planning tool outside but in conjunction with the lengthy and deliberate EFDS planning cycle.²³

3. Shared Tools

This section describes the tools produced by the CBA (phases I and II of the EFDS), who is responsible for producing them, and how the TFSD uses them—including applicability. As many of these same tools are used directly or indirectly in the TFSD's troop-to-task analysis, this section also serves as a useful familiarization prior to Chapter IV's description of the troop-to-task analysis process.

a. Phase I, Step 1

The first step of the EFDS cycle or the Capabilities Based Assessment is to conduct a Functional Area Analysis (FAA). The FAA develops the framework of MAGTF capabilities and tasks needed to complete missions in order to determine potential gaps and excesses. In a nine step process beginning with the identification of necessary strategic documents, it codifies the conditions under which Marine Corps Tasks (MCTs) are to be performed and the standards to which they *should* be performed. The conditions are those variables that an individual, unit, or system has to operate under and can be military, physical, civil, or from any number of sources that effect the ability to perform an assigned task. Standards refers to both the criteria, or actual threshold to which a task is expected to be performed, and the measures of how performance is rated.²⁴

²³ MCO 5311.1D,.3.

²⁴ MCO 3900.15B, Enc.1.

An intermediate step is the identification of MAGTF capabilities statements, which are any documents that provide descriptions of capabilities required to execute Marine Corps operating and enabling concepts. The identified capabilities are then matched to required MCTs as identified in the Marine Corps Task List (MCTL). The MCTL contains the Core Mission Essential Tasks (METs), that are what drive the TFSP. At the completion of the nine steps, the final product is a prioritized list of MAGTF capabilities, called the MAGTF Capabilities List (MCL) that becomes the input to the TFSP.²⁵ The process of moving from National Military Strategy to the MCTL is shown in Figure 4.

²⁵ MCO 3900.15B, Enc. 1.

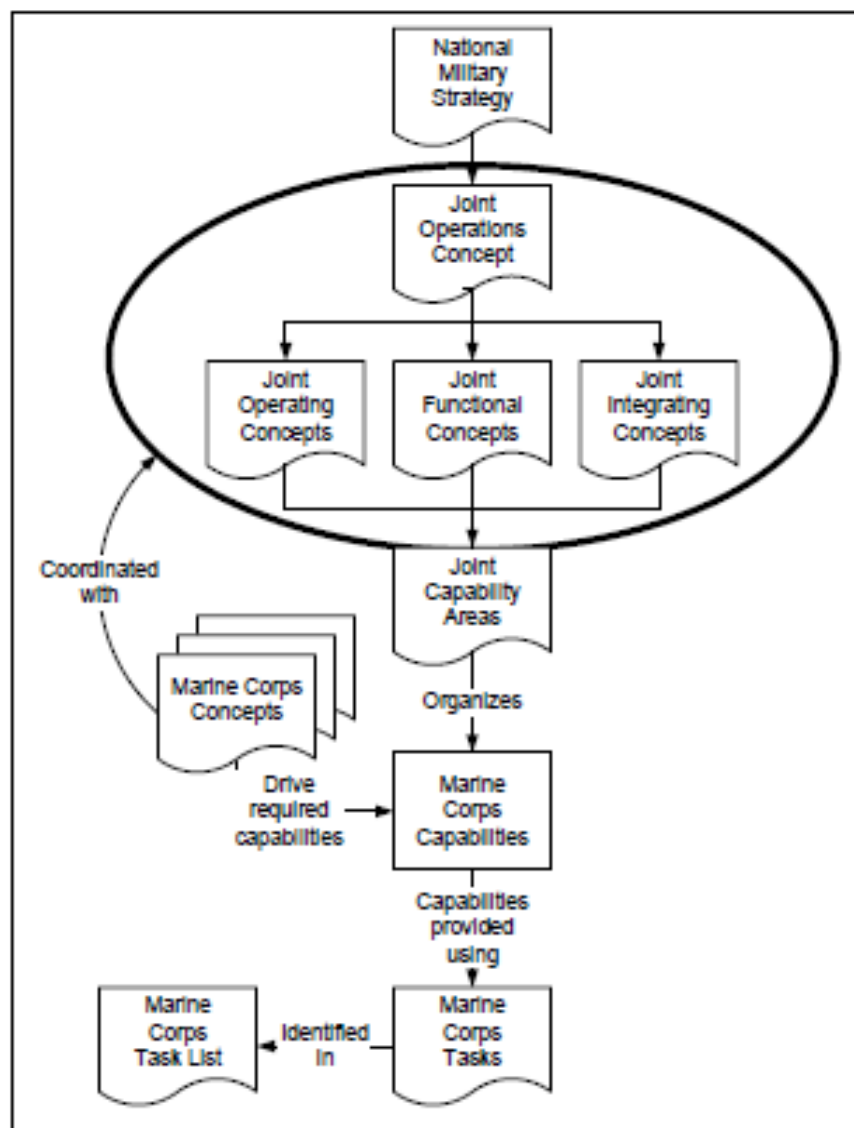


Figure 4. National Strategy to the MCTL (From MCO 3900.15B)

The FAA is an on-going process. However, a cut-off date for the submission of FAA changes to be included in phase I, step 2, is made by the MAGTF Integration Division (MID) and published in the first quarter of even calendar years. Even though the War Fighting Function (WFF) Integration Divisions (IDs) in the Capabilities Development Directorate oversee the entire phase I process, the FAA is actually conducted by the G3/G5 branch of MCCDC.²⁶

²⁶ MCO 3900.15B, Enc. 1.

b. Phase 1, Step 2

The second step of Phase 1 is the Functional Needs Analysis (FNA). Its purpose is to describe any gaps and existing excesses based on comparisons between current operational capabilities and the capability standards as set forth during the FAA. This phase is conducted by the WFF IDs, with assistance from various subject matter experts, by determining how well the MCTs can be performed against the standards set forth in the FAA. The gaps are to be expressed in operational terms; for example a weapon system with insufficient range would be identified as “range” or situations of information being available, but tardy would be identified as “information tardiness”. Finally, a risk assessment is conducted in order to determine the impact of not provided the capability as specified during the FAA on the MAGTF. The product of this phase is a prioritized list of gaps requiring a solution and excesses for redistribution called the MAGTF Gap List (MGL) for consideration in the next POM phase.²⁷

Figure 5 provides an overview of both steps of the entire phase. Of note, are the strategic and joint inputs into the process and the repository of its results called the Capabilities Based Assessment Database. What is not on this diagram are any contributions that may come from the TFSP, such as current force structure, Universal Needs Statements (UNS), uncompensated structure requests, and Table of Organization and Equipment Change Requests (TOECRs) that are further explained later in the chapter.

²⁷ MCO 3900.15B, Enc. 1.

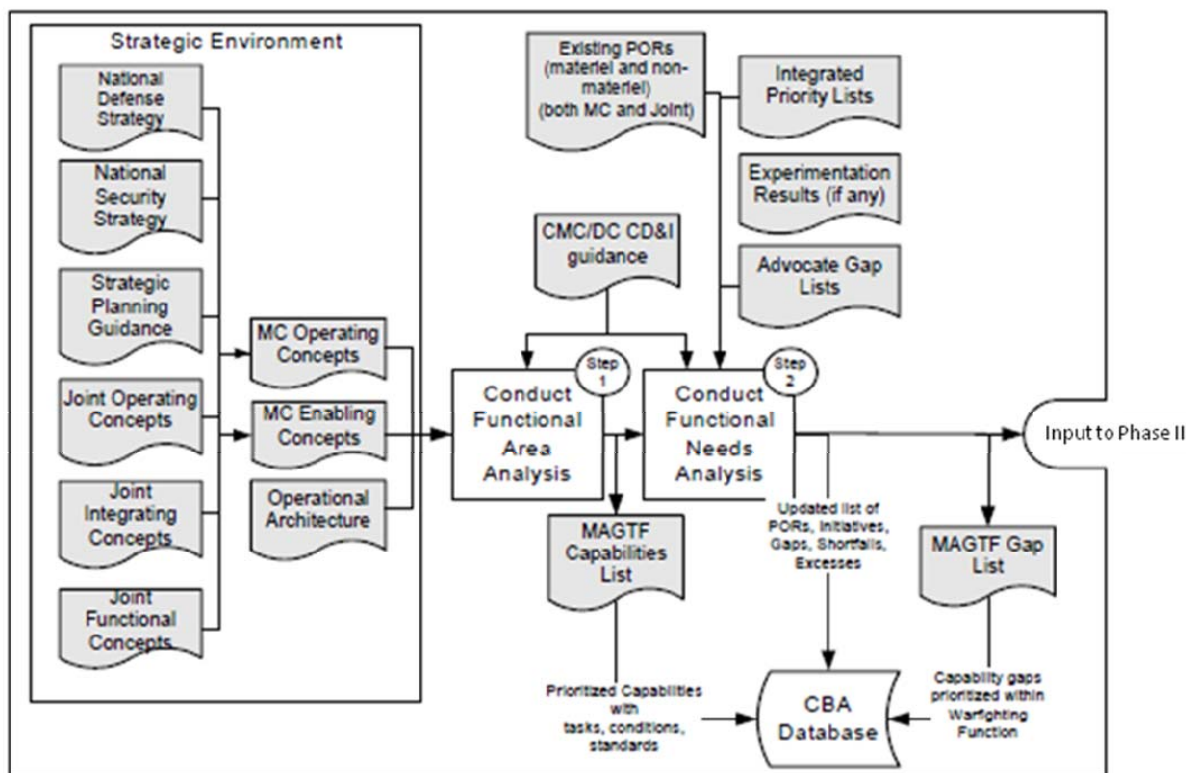


Figure 5. Overview of EFDS Phase I (From MCO 3900.15B)

c. Phase II, Step 1

The purpose of this step is to conduct a Functional Solutions Analysis (FSA), using what is referred to as a DOTMLPF Analysis, in order to find materiel and non-materiel solutions for the gaps identified in the MGL from Phase I using the DOTMLPF pillars. The DOTMLPF are the seven pillars of Marine Corps combat development: Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities. This step is conducted through the use of DOTMLPF Working Groups (DWGs), populated with stakeholder participation from across the Marine Corps and organized and chaired by each of the WFF IDs. Analysts from the CBA Branch, within the MAGTF Integration Division, provide technical capabilities support, DWG Charters, and conduct an instructional DWG workshop prior to the start of each DWG. An intermediate analysis process, called the Analysis of Materiel/Non-Materiel Approaches (AMA), identifies materiel solutions if non-materiel solutions are not sufficient to eliminate gaps and a conducts a risk assessment of each identified option.

The product resulting from the AMA is a prioritized list of materiel solutions (or combination of materiel solutions) and a ranking of how well each is expected to fulfill the capability gap. The product from this step is the Solution Planning Directive (SPD) that assigns responsibility to areas that address the capability gaps and thus becomes the plan to mitigate or eliminate them using the DOTMLPF pillars. Included in the SPD is a Course of Action recommendation for the best solution using data from the pre-acquisition process.²⁸ After the completion of the SPD by the Integration Division's DWGs, another standing DWG, chaired by the Director of the Total Force Structure Division, completes the capabilities development integration by conducting a final assessment of supportability of the SPD across all DOTMLPF pillars prior to being sent to the MROC.²⁹

d. Phase II, Step 2

In this step, the CBA Branch distributes the results of the SPD to each specific ID, headquarters, or command that is identified to take some sort of action, implements deadlines, and oversees the progress. Actions that are applicable specifically to the TFSP are those that require adjustments to how the Marine Corps uses the DOTMLPF pillars, such as revisions to doctrinal publications or training capabilities or adjustments to the Tables of Organization and Equipment (TO&E).³⁰

e. Phase II, Step 3

The final step of the CBA process develops the MAGTF Requirements List (MRL) in order to provide decision makers with a prioritized list of current programs of records (PORs) and new initiatives that will be considered in the upcoming POM cycle. Guidance and methodology is provided by the CBA Branch and prioritization is conducted by the DWGs, with final approval granted by the Director of CDD. Its

²⁸ MCO 3900.15B, Enc.2, 4–10.

²⁹ MCO 5311.1D, 4.

³⁰ MCO 3900.15B, Enc.2, 10–12.

purpose it to give guidance to decision-makers in order for them to most effectively resource the Marine Corps' most urgent solutions to capability gaps.³¹ An overview of all three steps is shown in Figure 6.

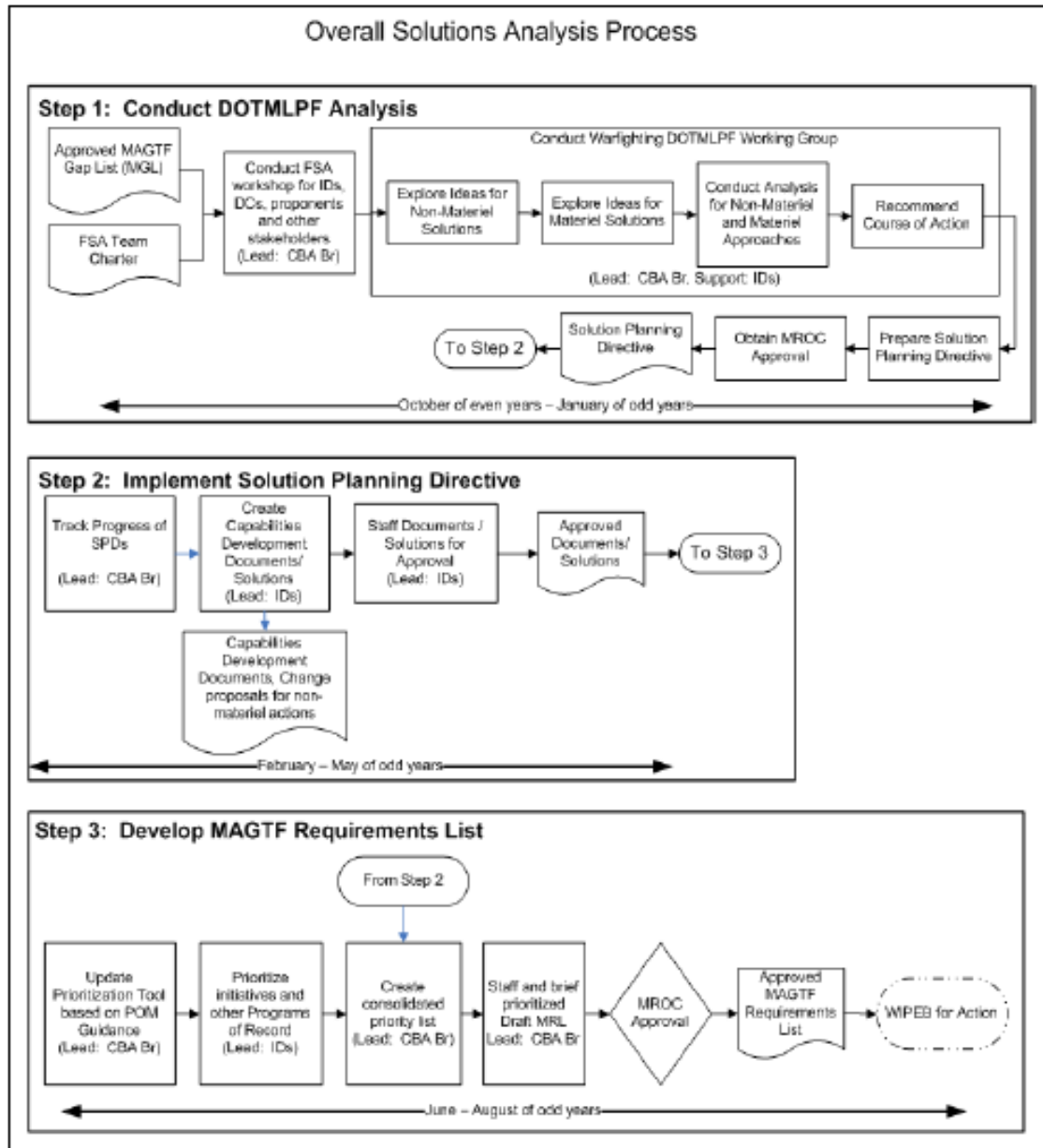


Figure 6. Overview of EFDS Phase II (From MCO 3900.15B)

³¹ MCO 3900.15B, Enc.2.

The tools and products of the Capabilities Based Assessment described in this section outline the TFSP's primary function in and services provided to the EFDS and the PPBES. While Marine Corps doctrine does not define a specific application of the troop-to-task analysis at this stage in the force structure analytical processes, it does examine and validate those products that a troop-to-task analysis relies upon.

A synopsis of the CBA process and interactions is provided in Figure 7. This "cheat sheet" might be useful to refer back to in order to keep track of which analysis and accompanying product occurs in which phase.

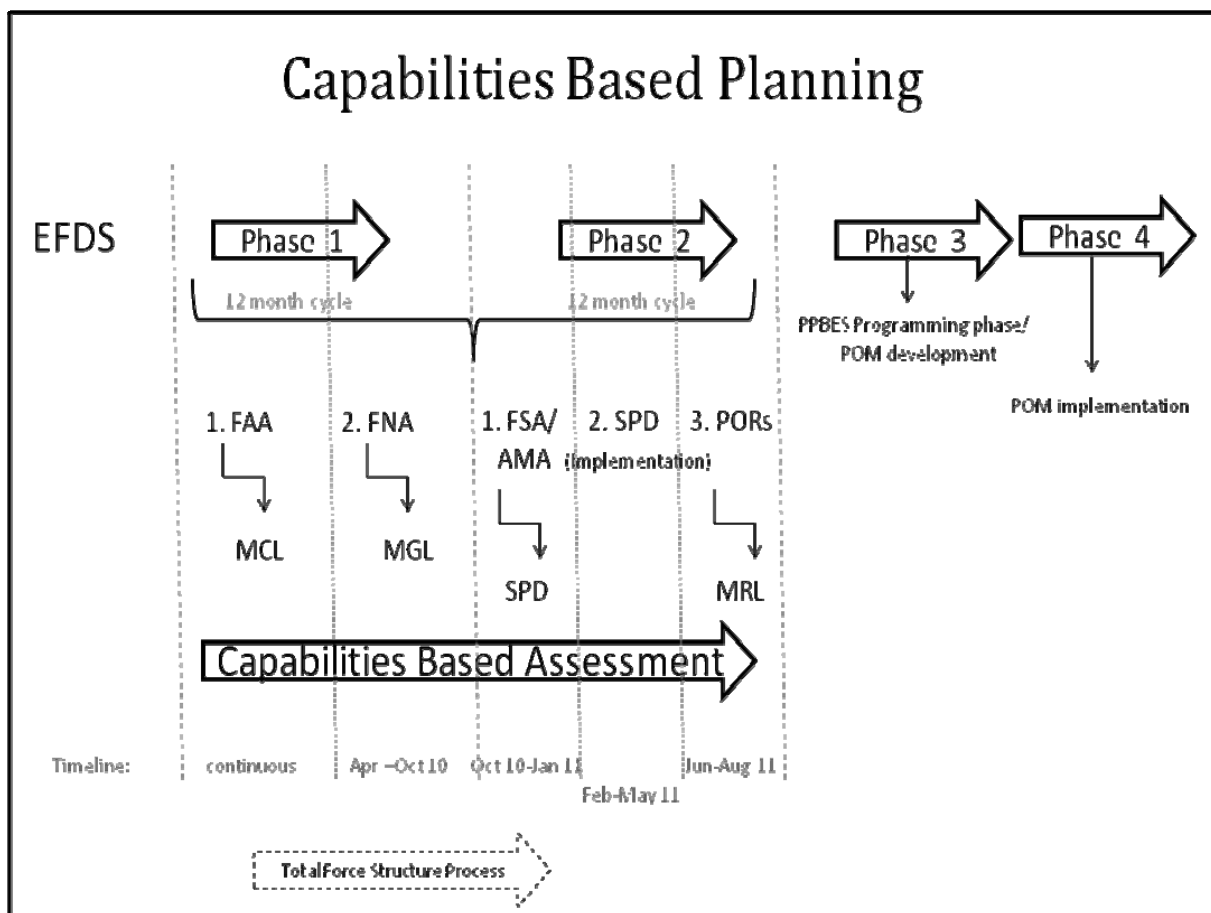


Figure 7. Overlapping processes

4. Approval Authority and Supporting Participants

A number of participants from all over the Marine Corps play various contributing roles in the entire CBA process, and indirectly through these contributions, provide subject matter expertise that is then infused into the TFSP. In this way, the TFSP does not occur “in a vacuum.” While not all participants detailed below contribute to each and every step, those listed are approval bodies and the major influences from the FMF that provide planning insight, guidance, and common sense vetting into all Marine Corps planning processes.

a. MROC³²

The mission of the Marine Requirements Oversight Council is to advise and assist the Commandant of the Marine Corps in the execution of his Title 10 USC and Joint Chiefs of Staff responsibilities. As such, it is the highest-level executive review board for the integration of the Marine Corps’ diverse institutional perspectives. It is typically chaired by the Assistant Commandant of the Marine Corps (ACMC), but the CMC may act as chair for selected topics. Either may designate associate members or invite non-voting guests, such as individuals from other Services. In addition to the CMC (when chairing) and the ACMC, the other permanent voting board members are:

- Director, Marine Corps Staff (DMCS)
- Commander, Marine Forces Command (CMFC)
- Counsel for the Commandant (CL)
- Deputy Commandant for Manpower and Reserve Affairs (DC, M&RA)
- Deputy Commandant for Aviation (DC, AVN)
- Deputy Commandant for Plans, Policies, and Operations (DC, PP&O)
- Deputy Commandant for Installations and Logistics (DC, I&L)
- Deputy Commandant, CD&I
- Deputy Commandant for Programs and Resources (DC, P&R), also designated as the MROC Secretary.

³² Commandant of the Marine Corps Policy Memorandum 01-08, Enc.1.

Of note, the Assistant Deputy Commandant for Programs and Resources is the MROC Review Board Chairman, and the only non-voting permanent member.

The DCs are also titled Proponents of their respective programs; for example, DC, CD&I is the EFDS and TFSP Proponent, DC, M&RA is the Marine Human Resources Development Process (HRDP) Proponent, and DC, P&R is the PPBES Proponent. DCs for CD&I, PP&O, I&L, and AVN are also tasked with providing colonel-level or higher voting members to DC D&I's annual Uncompensated Review Board (URB). DCs for M&RA and P&R are required to provide colonel-level or higher non-voting representation. In addition to service on the MROC, the DCs are also tasked with the responsibility of participating in all force structure DOTMLPF Assessments³³

Each of the force structure initiatives (products) that are developed in the CBA, EFDS, TFSP systems, must go before a MROC Review Board (MRB) and be approved by the MROC before reaching the CMC's desk for final approval. As the primary force structure approval authority, the MROC serves a vital role in any of the force structure, manpower, budgeting, and acquisitions processes.

b. MAGTF Advocates³⁴

Also refers to the six Deputy Commandants listed above; however, the MAGTF Advocate title specifically refers to their capacity as a liaison between the MAGTF Operating Forces and Supporting Establishment and the various force structure process owners both within the EFDS and external to the Marine Corps. While the most recent MROC charter, signed by CMC General Conway in July 2008, expands greatly upon the definitions of Advocate responsibilities from how they are listed below, the outdated MROC charter is referenced for the purpose of this review because it provides more succinct definitions. As Advocates, these individuals are also responsible for a thorough review of all mission statements under their advocacy no less than every 4 years³⁵. The MAGTF Advocate assignments are as follows:

³³ MCO 5311.1D, 1–35.

³⁴ CMC Policy Memorandum 1-02, Enc.1, 3.

³⁵ MCO 5311.1D, 1–35.

- ACMC – for the Headquarters Marine Corps
- DC, M&RA – for the Marine Corps Recruiting Command
- DC, AVN – for the Aviation Combat Element
- DC, PP&O – for the Ground Combat Element, Chemical/Biological Incident Response Force, Marine Corps Security Forces, and the Marine Security Guard Battalion
- DC, I&L – for the Combat Service Support Element, Installations, and Materiel Command
- DC, CD&I – for the Command Element, the Marine Corps Combat Development Command, and Science and Technology

c. Functional Advocates

The functional advocates provide subject matter expertise at various levels of the many systems discussed in this study. Of note are the first three listed, who are called upon frequently for input into force structure considerations. The Directors of Intelligence and C4 are further tasked to provide colonel-level or higher non-voting member to the URB³⁶. They are:

- Director, Intelligence (I)
- Director, Command, Control, Communications, and Computers (C4)
- Director, Administration and Resources (AR)
- Staff Judge Advocate to the Commandant (SJA)
- Director, Public Affairs (PA)

d. Warfighting Functions (WFF) IDs

The Integration Divisions are under the Capabilities Development Directorate, parallel in hierarchy to the TFSD. (See **Appendix A** for organizational flow charts.) As mentioned previously, each of the IDs oversee many of the DOTMLPF Working Groups and organize the various levels of subject matter expertise into structured forums in order to reach mutually agreeable solutions across the Marine Corps.

³⁶ MCO 5311.1D, 1–35.

e. MARFOR and Supporting Establishment Commanders

The Commanders of Marine Forces (COMMARFORs) and the Supporting Establishment are integral in providing timely, operationally relevant support and expertise regarding manpower, equipment, logistics, and training for the warfighting requirements of the operating forces. Like the advocates, they are regularly called upon to provide input and guidance into force structure DOTMLPF Assessments and DOTMLPF Working Group participation. The Commanders MARFORCOM and MARFORPAC are specifically tasked to provide colonel-level or higher voting members to the URB. Commander MARFORSOC must provide the same, non-voting member.³⁷

They are:

- Commander Marine Forces Command (MARFORCOM)
- Commander Marine Forces Pacific (MARFORPAC)
- Commander Marine Forces Reserve (MARFORRES)
- Commander Marine Forces Special Operations Command (MARFORSOC)
- Commander Marine Corps Systems Command (COMDRMARCORSYSCOM)
- Commander Marine Corps Logistics Command (MCLC)
- Commanding General Marine Corps Recruiting Command (MCRC)
- Commanding General Training and Education Command (TECOM)

f. Combatant Commanders

Combatant Commanders are the Marine Expeditionary Force (MEF) level and below commanders. They are typically either tasked from higher with providing feedback to the planning process or they identify force structure problems within their own ranks and send proposed changes up the chain of command.

³⁷ MCO 5311.1D, 1–35.

*g. Occupational Field and MOS Managers, Billet Sponsors*³⁸

Occupational Field (OccFld) managers are the Deputy Commandant, HQMC division director, the CG of Marine Corps Recruiting Command, or the CG of Marine Corps Systems Command. The OccFld managers are assigned annually and as such have purview over a grouping of Military Occupational Skills. OccFld managers are also responsible for assigning MOS managers who provide technical support and expertise for all matters relating to the MOS or groups of MOSs they are responsible for.

Billet sponsors are those responsible for billets external to the Marine Corps in which Marines serve. As the representative to other services or organizations, they are responsible for remaining up-to-date with Marine Corps force structure matters.

This overview of the MROC and key participants supporting and contributing to the development of the Marine Corps force structure process is meant as both a familiarization and to emphasize the sheer volume of Marine Corps wide involvement. While most likely obvious to those more familiar with force structure processes, it is important for those less familiar to be exposed to how all the players interact, including various influences they may have on different parts of the overall system. Greater depth of the tasks and responsibilities of each can be found in both the EFDS and TFSP Orders.

C. TOTAL FORCE STRUCTURE PROCESS

The overall purpose of the TFSP is to provide the Commandant with a tool that matches capabilities needs to force structure solutions and the associated costs with a prioritized list of operationally feasible options. As a subsystem of the Capabilities Based Assessment (EFDS Phases I and II), the TFSP uses the same products and under policy constraint, transforms top-down and bottom-up recommendations into capabilities required to execute the Marine Corps Essential Tasks. Like the parent systems detailed above, the TFSP also relies heavily on vetting under the DOTMLPF pillars.

³⁸ MCO 5311.1D, Enc 1, 7-1-7-5.

1. Inputs

Inputs include various outside influences that affect a process, and/or factors that create direction and impetus for action within the TFSP. Two primary types of inputs are top-down and bottom-up. One of the top-down planning products is the MAGTF Capabilities List, the same product from the Functional Area Analysis, Phase I of the EFDS. Tools that are common to both top-down and bottom-up identification of force structure capability gaps are:

Universal Needs Statement (UNS)—acts as a “work request” after a gap has been identified and details a specific equipment or structure request in order to fill that gap. They can be submitted top-down by the DCs/Advocates or bottom-up from operational commanders or supported elements. Most UNS are for equipment requests. If an UNS is for a force structure request, it must be for compensated force structure of like kind. (For example, enlisted billets can only replace other enlisted billets, officers can only replace officers, and so forth.) Any uncompensated force structure UNS received is returned to the requestor with further instructions for resubmission as an uncompensated structure request for the next Uncompensated Review Board (URB). UNS may also be used to identify redundant or unneeded capabilities.³⁹ An example of an UNS template can be found in Appendix B.

Table of Organization and Equipment Change Request (TOECR)—is a request for modification to any data stored in the TFSMS. TOECRs are submitted electronically through the Combat Development Tracking System and can come from one of two sources. The first source is either top-down from the Occupational Field and MOS managers or bottom-up from billet sponsors and the operating forces. The second TOECR source is as a by-product of the URB, after structure decisions have already been made and are ready to be updated in the TFSMS.

Uncompensated Structure Requests—Force structure change requests are either compensated or uncompensated. Compensated requests work similarly to “pay-as-you-go” rules in that the request is received with force structure suggestions included. This is

³⁹ MCO 3900.15B, Enc.6, 1.

done when a commander identifies and uses excesses in their own command to fill identified gaps. UNS and TOECRs are expected to be compensated. Uncompensated requests are those that do not include force structure solutions and require new structure to be added to fill identified gaps. All uncompensated structure requests are submitted to the annual URB where they are “racked and stacked” against each other in the competition for very limited force structure resources. All submissions to the URB are required to be in a very specific format with the required supporting documents. The troop-to-task analysis is the primary enclosed justification for an uncompensated structure request, showing that the requesting unit has done their analytical homework prior to DOTMLPF consideration.⁴⁰ Examples of uncompensated structure request templates can be found in Appendixes C, D, and E.

a. Top-Down Specific—Strategic Guidance

Changes in mission or equipment (or both) are the primary driving forces for action within the TFSP system. Changes in mission requirements can come from several high-level sources, most notably the Commandant of the Marine Corps, the President, and Congress. Changes in equipment are typically initiated during the Approved Acquisition Objective (AAO) process.⁴¹ The distinction between top-down and bottom-up can be blurred depending on where and by whom the force structure change or gap was identified.

b. Bottom-Up Specific—Fleet Marine Force Needs

When the top-down strategic guidance changes to such a great extent that the operating forces can no longer perform their missions as prescribed—or if equipment from the existing Tables of Organization and Equipment are no longer deemed sufficient—MARFOR and combatant commanders not only have the ability to influence the force structure process from the bottom, but are highly encouraged to do so.⁴² The

⁴⁰ Maj Joel Hoffman, personal and telephone interviews, 5 January 2010–16 March 2010.

⁴¹ MCO 5311.1D, Enc.1, 1–4.

⁴² MCO 5311.1D, Enc.1, 1–4.

tools they use to do this are the same ones that can also result from the top-down EFDS process, the UNS, TOECR, and uncompensated structure requests. Combatant commanders however, have an addition tool:

Urgent Universal Needs Statement (UUNS)—similar to an UNS, an Urgent UNS initiates a less accurate, abbreviated, but more expedient request for critical shortages identified in the field. Because UUNS do not undergo the same DOTMLPF scrutiny as UNS receive, it is expected that the acceptance of UUNS will result in some kind of structure deficiency that is partially mitigated and tolerated due to the short term operational necessity.⁴³

Inputs to the TFSP are summarized in Figure 8.

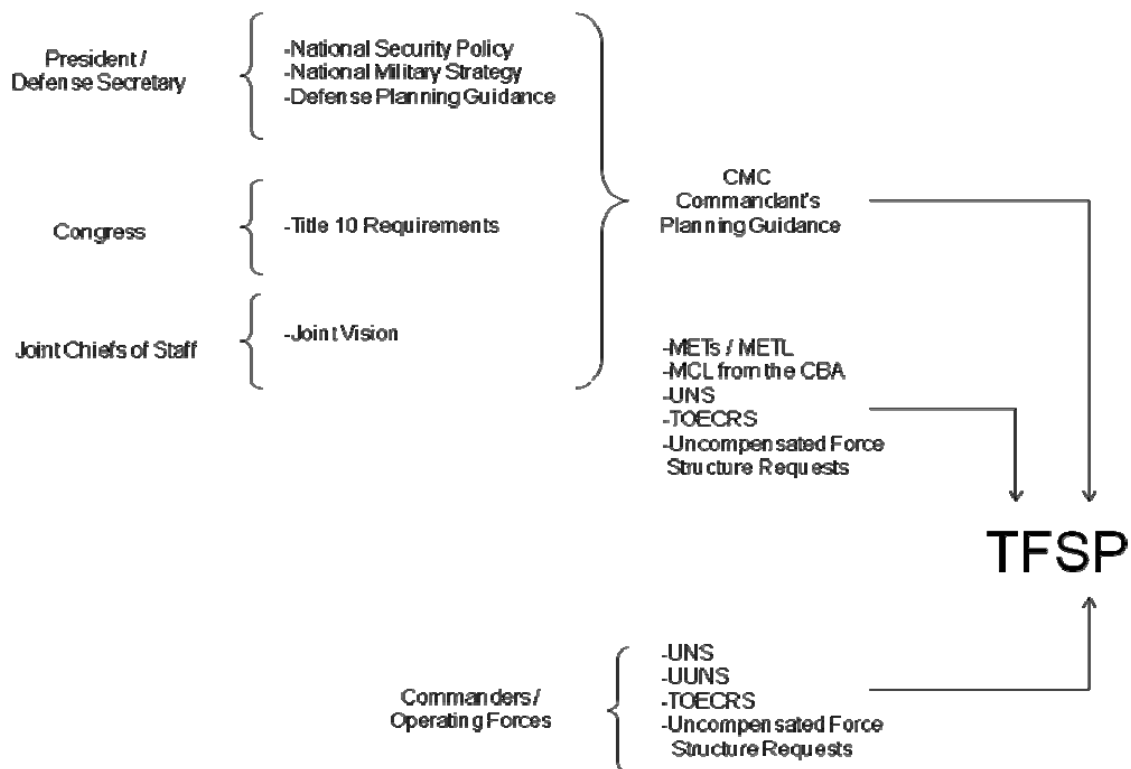


Figure 8. TFSP Inputs

⁴³ MCO 3900.15B, Enc.7, 1.

2. Throughputs⁴⁴

The throughput, or Analysis Phase, runs parallel to the Functional Needs Analysis from the EFDS Phase I, step 2. While the TFSD does not actually perform the FNA, it works in tandem as a force structure subject expert with the IDs who do perform the FNA in order to develop the MAGTF Gaps List. If Mission Essential Tasks cannot be performed by the operating forces to the standards or conditions required, then gaps are identified and force structure may be proposed to fill those gaps. This phase functions to compare what the Marine Corps *needs* to do (METLs) against what the MAGTF Capabilities List says it *can* do and holds both up to existing force structure for potential materiel and non-materiel solutions to the identified force structure gaps. TFSD's primary function in this process is to serve as the integrator between the existing total force structure and new demand signals. The demand signals are received through DOTMLPF Assessments as lateral input within the CDD, gaps identified through the CBA from higher, and through the submission of UNS, TOECRs and uncompensated structure requests, or UUNS from the operating forces.

The primary throughput of the TFSP is the annual Uncompensated Review Board. The URB is the vetting process for all uncompensated force structure requests. It is suggested that organizations look within their own structures prior to submitting an uncompensated request. However, when structure cannot be found, the URB processes the requests, prioritizes them with recommended compensation, and with the DOTMLPF Working Group's estimate of supportability, are presented to the DC CD&I for approval.⁴⁵

Any uncompensated force structure considerations involving manpower (billets) must be accompanied by a troop-to-task analysis in order to validate the need for manpower force structure changes. This is done by matching a unit's METs against the MCTL and skills detailed in the Military Occupational Specialty (MOS) Manual, MCO

⁴⁴ MCO 5311.1D.

⁴⁵ MCO 5311.1D.

1200.17A. As the troop-to-task analysis is a required attachment to any uncompensated force structure change request and, it is accomplished by the units submitting the request.

3. Outputs⁴⁶

The identified force structure gaps are then forwarded to internal subject matter experts who analyze them for DOTMLPF implications, with the scale of the solution driving the scale of the analysis. If a functional gap can potentially be satisfied with the deletion or addition of force structure, these implications are then also analyzed for DOTMLPF implications.

Once a price tag can be placed on the human resource cost, by modeling authorized end-strength against the new structure requirement, the initiative is sent to the MROC to compete against other priorities. The options available to the MROC at this point are to accept the identified risks of current manning, to make internal adjustments to satisfy the identified requirement, or to present to the CMC an argument for more resources.⁴⁷

Results of the output phase are:

a. Initiates Other Program Changes

Once billet and equipment requirements are correctly entered into the Total Force Structure Management System (TFSMS), this triggers the Human Resource Development Process, Acquisition Process, and Material Total Life Cycle Management Process.

b. Approved Acquisition Objective

If the FSA (Phase II, Step 1) recommends a new materiel solution to a capability gap, the AAO process is how a new materiel solution is added to the total force structure. DC, CD&I, as the AAO process owner has tasked the Director, CDD with responsibility for its management and maintenance.

⁴⁶ MCO 5311.1D.

⁴⁷ Major Joel Hoffman, "Total Force Structure Process," TFSD Internal Brief, dated 9 October 2009.

c. Total Force Structure Management System

In addition to the TFSP, the TFSD is also responsible for managing the results of the process in the TFSMS. The TFSMS is the one authoritative source for all force structure requirements and authorizations. The version in use is a propriety program that is in its final operational testing phases. Further evaluation of functionality will be better assessed after the next publication of the semi-annual Authorized Strength Report in March 2010.

d. Updates to the TO&E and MOS Manual

Once MROC approval is given for changes to force structure, the updates are documented in the applicable Table(s) of Organization and Equipment in the TFSMS. It is the TFSD's responsibility to draft and publish all MCBUL 5400s, which are the official notification processes for force structure changes. In the event force structure changes require a reassignment of MOS duties, the MOS manual is also revised to reflect the updates.

e. Publishing of Related Orders and Directives

In addition to the above actions, the remaining product outputs the DC CD&I is responsible for publishing as a result of the TFSP is MCO 5311.1, MCO 5320.12 (Precedence Levels for Manning and Staffing), the announcement of force structure changes in the MCBul 5400, the assignment of Advocates, Occupational Field Managers, and MOS specialists every fiscal year, the Maritime Prepositioning Force List, the bi-annual Authorized Strength Report, and the Organization of Marine Corps Forces (MCRP 5-12).⁴⁸

Figure 9 depicts a summary of the overlapping EFDS, CBA, and TFSP force structure planning and development processes and the associated products.

⁴⁸ MCO 5311.1D, 8.

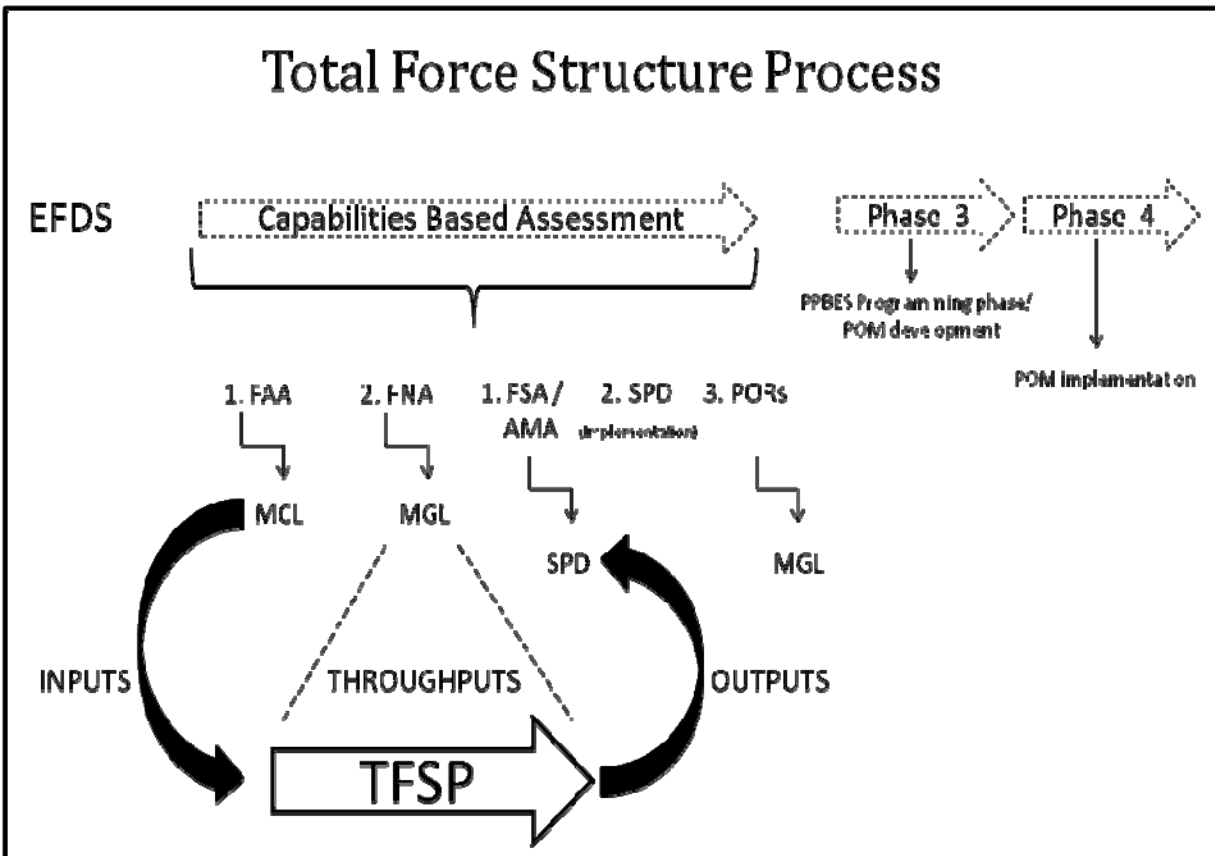


Figure 9. Overlapping processes

D. SUMMARY

This chapter's explanation of the force development process is straightforward but complex. One source of complexity is the interaction among multiple systems and stakeholders including the Acquisition System, DoD Budgeting system, and the Marine Corps Human Resource Development Process (HRDP). The TFSP relies solely on subordinate units to provide troop-to-task analyses to justify their requests for any manpower changes in the complex force structure system. Unfortunately, as the next chapter highlights, there is quite limited information in the TFSP that offers instructional guidance on how the procedure should be conducted.

IV. TROOP-TO-TASK ANALYSIS PROCESS

A. OVERVIEW

1. What Is a Troop-to-Task Analysis?

Enclosure (1) of MCO 5311.1D, the Total Force Structure Process Procedure Manual, defines a troop-to-task analysis as:

A troop-to-task analysis is done by evaluating each mission essential task (MET) that the unit is charged with executing through the use of subject matter expertise (SME), and determining the right skills by grade and quantity needed to accomplish the prescribed tasks assigned.....SMEs utilize the Military Occupational Specialty (MOS) Manual as the baseline of the troop-to-task analysis by matching the METs of the unit to the available core and above core tasks available in the Marine Corps human resource development system.

At face value, the definition seems fairly simple. But, where do each of these elemental products—the mission essential tasks, core tasks, above core tasks—come from? What actions or events trigger the need for a troop-to-task analysis to be conducted? Who are the “subject matter experts” and what are their roles affecting the process? Who are the primary stakeholders in this process? As was expressed by senior personnel at the Operations Department, Total Force Structure Division, a central concern is that the process has evolved incrementally resulting in added complexity mixed with human subjectivity. This chapter describes the TFSD’s current procedures and requirements for conducting a troop-to-task analysis. The final chapters conclude with an analysis of the TFSD as an organizational system prior to the conclusions and recommendations for addressing concerns with the current troop-to-task analysis processes.

2. Requirements

All uncompensated structure requests submitted to the TFSD for consideration during the current Uncompensated Request Board are required to contain a troop-to-task analysis as a justification for the force structure change requests. This means that the TFSD is not actually performing the analysis themselves, but providing technical

guidance to those above and below echelons who are submitting the uncompensated structure requests. Structure requests are submitted in package form per the current year's MARADMIN detailing the submission process. TFSD is responsible for conducting the URB, performing the required DOTMLPF analysis with the requisite subject matter experts, and prioritizing any solutions prior to submission to the MROC for approval of very limited new force structure.

B. THE TOTAL FORCE STRUCTURE DIVISION TROOP-TO-TASK ANALYSIS PROCESS

1. Inputs

A troop-to-task analysis is required when one (or both) of two organizational changes occur: a change in mission or a change in equipment. Either of these events can trigger the need for a change to the Marine Corps' Marine Corps Tasks and/or a unit's Mission Statement and Mission Essential Tasks.

a. Definitions

Mission Statement—Each Marine Corps organization is required to have a Mission Statement, which can be found in the TFSMS in the T/O&E report. The Mission Statement describes an organization's mission and tasks, its organization, command and signal, administrative and logistical capabilities, and its concept of employment.⁴⁹ The concept employment is how that organization intends to utilize its personnel and equipment in order to accomplish the assigned mission. For this reason, it has a direct impact on how many billets (number of personnel based on requirements) and the kind and amount of equipment it requires.

Task—Defined as an action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization that provides a capability.⁵⁰

⁴⁹ MCO 5311.1D, 8–8.

⁵⁰ MCO 3900.15B, 8–2.

Marine Corps Tasks (MCTs)—A part of Marine Corps doctrine, MCTs describe tasks by title, a description of what it each should accomplish, and the measures and standards by which proficiency is rated in order to assure successful mission accomplishment.⁵¹

Marine Corps Task List (MCTL)—Collection of all approved MCTs.

Core Mission Essential Tasks (METs)—Just like it sounds, the crucial tasks required for a unit to successfully complete its mission. The distinction between core METs and MCTs are that these tasks are specifically attached to and derived from a unit's or organization's mission statement.

Mission Essential Task List (METL)—Collection of a unit's or organization's (core) METs.

b. Top-Down Inputs

If the MCTL or any unit mission changes based on changes in national security or changes in Marine Corps doctrine, this can trigger the need for top-down troop-to-task analysis to determine how the doctrinal change is likely to affect the operating forces. Likewise, if a doctrinal mission statement changes, this will also have a top-down effect that should require a troop-to-task analysis. If the change results in a gap that is best resolved by a submission to the URB, a troop-to-task analysis is completed by the requesting unit as a required part of the package.

c. Bottom-Up Inputs

As mentioned previously, commanders are highly encouraged to participate in doctrinal development when they notice structural changes due to evolving circumstances that have not yet been reflected doctrinally. Common examples are when units are hastily fielded new equipment, but do not have the inherent structure to utilize it or when missions change to reflect rapidly evolving battlefield conditions. A troop-to-task analysis at the operational unit level is conducted to validate changes observed in billet or equipment requirements.

⁵¹ MCO 3900.15B, 8–2.

2. Throughputs⁵²

The first step of any troop-to-task analysis is to compare an organization's METL to the MCTL, to identify all tasks it must be able to perform to accomplish mission success. Once this is completed, there are three additional phases. The template TFSD provides as an example is in **Appendix C**.

a. Develop Subtasks

The development of subtasks is the identification of all implied tasks that must be accomplished in order to fulfill the commander's MET responsibility. For example, for the MET "Operate a COC (combat operations center)," implied tasks are to conduct fire support planning, prepare combat operations, direct the intelligence effort, process casualties, and so forth.

b. Determine Proper Mix of Billets and Equipment

Once a complete list of tasks a unit is responsible for accomplishing has been developed, the next step is to populate the tasks with the sufficient number of billets and type of equipment needed with which to perform those tasks. The distribution of this work load is further broken down into day-to-day and contingency operations. The Military Occupational Specialty Manual, MCO 1200.17A, is the primary tool used to develop the billets and the Table of Authorized Material Control Numbers (TAMCN) is used to identify equipment. Equipment requirements are distinguished as individual, organizational, or both.⁵³

c. Build the Organization

With the previous steps complete, a new or modified organization is framed that adequately reflects the requirements necessary to complete the unit's mission and the correct number and type of billets and equipment with which to do so.

⁵² MCO 5311.1D, Appendix L-1.

⁵³ MCO 5311.1D, 2-3.

3. Outputs

a. A Product Tool

The output of a troop-to-task analysis process can be any number of updates to products inherent in the force structure process. Its immediate use however, is as a product tool that is used in further analysis and debate during the Uncompensated Review Board in order to prioritize uncompensated structure requests.

b. Doctrinal Changes

If the troop-to-task analysis results are accepted and the resultant force change and/or mission statement changes are deemed appropriate, the troop-to-task analysis instigates these doctrinal changes. The TFSMS is the integrating system that manages, records, and tracks these changes. These changes may include additions and/or revisions to the MOS manual, the T/O&E, units' mission statements, and the MCTL.

c. A Process Trigger

Once changes are approved through the MROC process, signed by the Commandant, and updated in the TFSMS, the final output is a trigger to other vital Marine Corps planning processes. The programs that are directly influenced by the TFSMS are the Human Resource Development Process, the Acquisition Process, and the Life Cycle Management Process.⁵⁴

4. Summary

A troop-to-task analysis is in very broad terms any analytic process that matches personnel and equipment to a specified list of tasks to be performed for the purpose of developing the structure necessary to complete a mission. For the Marine Corps, this is typically accomplished by determining the minimum amount of structure that can accomplish a unit's METs and any implied tasks as derived from the doctrinal MCTL.

⁵⁴ MCO 5311.1D, 2-4.

The purpose that a troop-to-task analysis serves the TFSP is to provide a justification for the force structure requests received from either higher or lower echelons. As such, they are usually performed by the requesting unit with the guidance that TFSD provides.

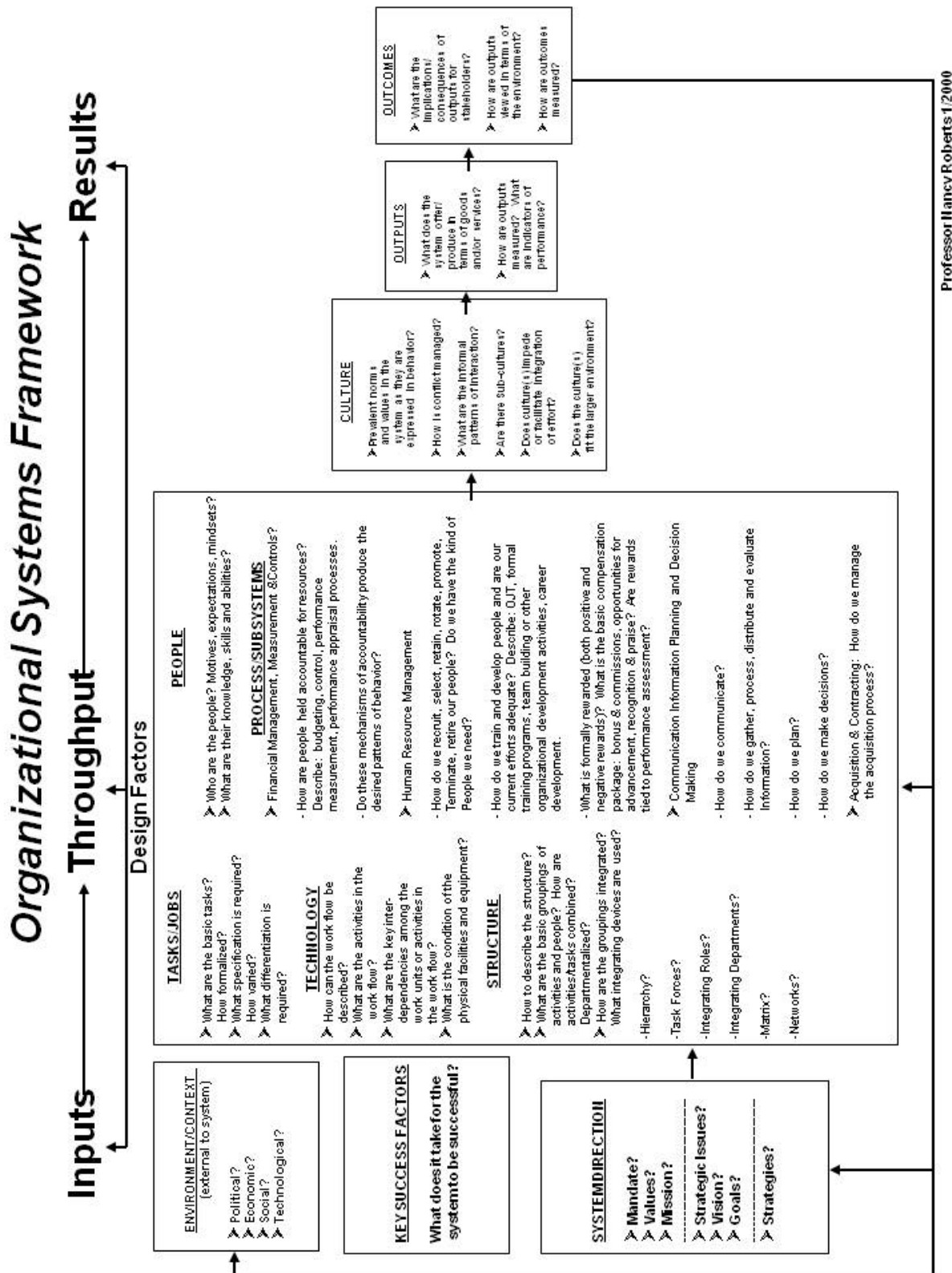
V. ANALYSIS

A. OVERVIEW

Chapter II explained some of the most commonly accepted organizational theories and models used in systems analysis. For review, these were Mintzberg's theory of organizational configurations, a systems model developed by Roberts, and Thompson's Typology, a Configuration model. Using elements from each, this section describes how the Total Force Structure Division functions within both the Total Force Structure Process and Expeditionary Force Development System, how the TFSD utilizes and integrates troop-to-task analyses, and then makes observations about the system and program interactions. While the TFSD's troop-to-task analysis process is only one of many products found in one of many subsystems, examining how each of these interact from a systems standpoint will clarify areas of organizational strength and identify potential areas for improvement for the final observations and recommendations.

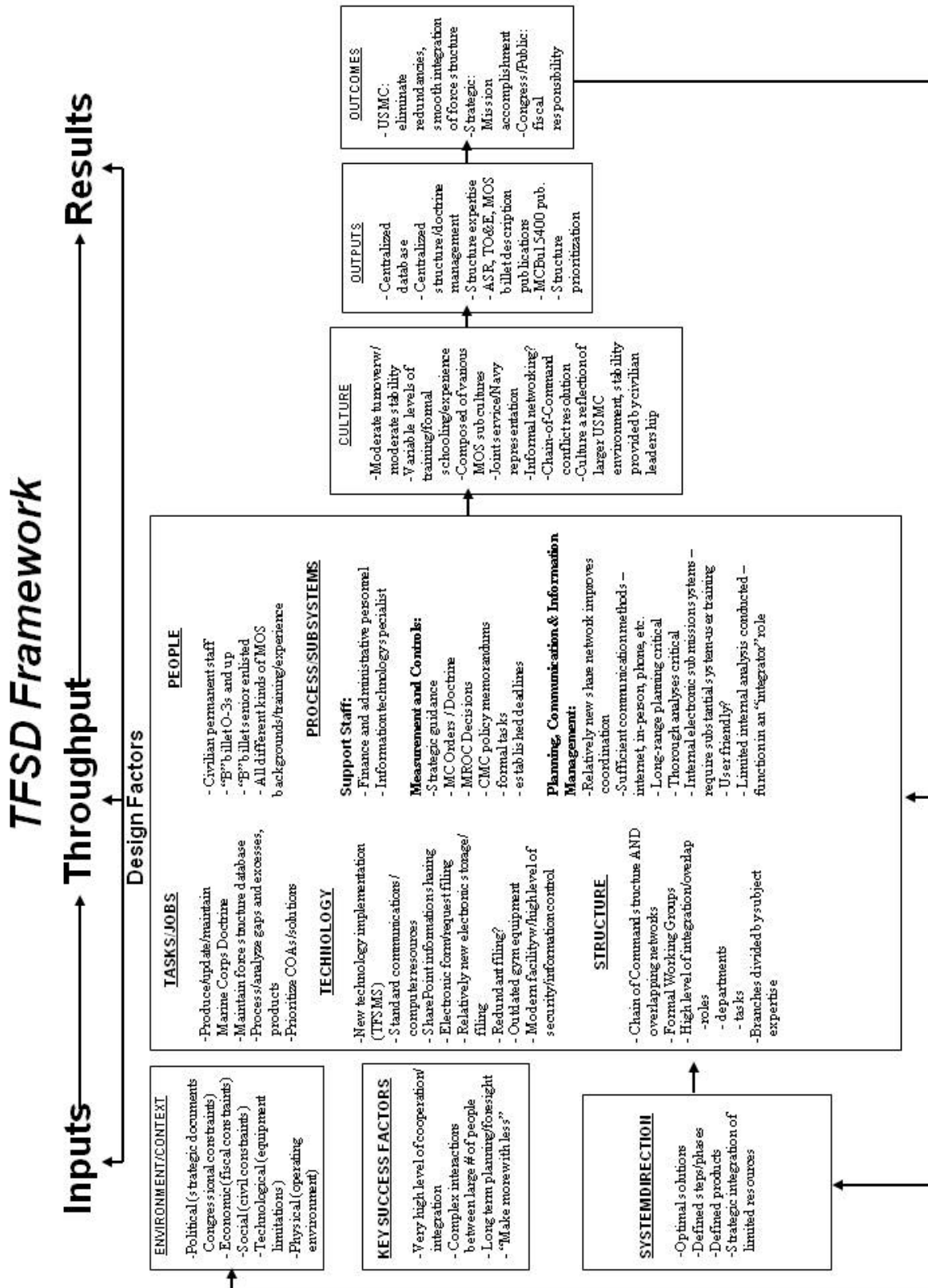
B. THE TOTAL FORCE STRUCTURE DIVISION AS A SYSTEM

The systems model is an excellent tool for providing the basic framework of inputs, throughputs, and outputs of an organizational system such as the TFSD. **Figure 10** is another representation of the basic framework presented in Chapter II. **Figure 11** is the same framework, but with the TFSD's characteristics added for further consideration and discussion. By going through each of the systems model components, terminology from the other two theorists can be used to give a more complete description of how the organization operates.



Professor Nancy Roberts 1/2000

Figure 10. Roberts' Systems Model, revisited (From Roberts, 2000)



CULTURE

- Moderate turnover/moderate stability
- Variable levels of training/formal schooling/experience
- Composed of various MOS subcultures
- Joint service/Navy representation
- Informal networking?
- Chain-of-Command conflict resolution
- Culture a reflection of larger USMC environment, stability provided by civilian leadership

OUTPUTS

- Centralized database
- Centralized structure/doctrine management
- Structure expertise
- ASR, TO&E, MOS bullet descriptions
- MCBol 5400 pub. prioritization

OUTCOMES

- USMC: eliminate redundancies, smooth integration of force structure
- Strategic: Mission accomplishment
- Congress/Public: fiscal responsibility

Figure 11. TFSD Systems Model

1. Context

The external environment within which TFSD functions is complex with many real-world fiscal and political constraints. Complexity comes from the number of strategic documents with which it needs to adhere, and the number of equally complex systems with which it overlaps. Another aspect of the external environment it must consider is the political, civil, and physical operating environment that Marines forces must function and fight in. All these drive the restrictions, conditions, and solutions with which TFSD integrates in order to make analytical arguments and decisions regarding force stabilization and analytical arguments for new force structure procurement.

2. Key Success Factors

In order for this type of organization to be successful, it must be adept at high levels of cooperation and integration. Functioning in an integration role, it not only serves as the Marine Corps' force structure subject matter expert, but also the document and force structure doctrine record keeper. As such, this information needs to be not only visible, but also easily accessible to both higher and lower system users. Like most Marine organizations, the TFSD has to be creative at finding ways to "do more with less". Because of the number of potentially far-reaching consequences across the Marine Corps, consistent, critical, long term planning is crucial for total organizational success.

3. System Direction

Capabilities Based Planning is a relatively new requirement. As such, the TFSD and the other nine Combat Development Directorate divisions have only been in existence in their present structure since 2005. The current version of the Marine Corps Order guiding the entire TFSP was signed as recently as 26 February 2009. The electronic submission of UNS, UUNS, and TOECRs has been a requirement in only the past year. While driving factors such as internal requirements, mission statements, and directives are established, the TFSD overall is still a new organization and as to be expected, is still experiencing a somewhat steep learning curve.

4. Design Factors

a. Tasks

As described in previous sections, there appears to be no shortage of tasks within the TFSD. Of note, what the TFSD does *not* do the troop-to-task analyses. This type of analysis is specifically tasked to be done by the uncompensated force structure requestor. Because the TFSD's involvement in the troop-to-task analysis is limited to providing instruction to the actual analysts only, there is a limited understanding of how to remove inherent subjectivity and even of what the desired end product should look like.

b. Technology

Much of the TFSD's technology, in the form of the TFSMS, electronic request tracking, and the internal Share Point technology is relatively new. Some of this technology is still completing the developmental stages. Not only do the personnel use these systems on a daily basis, but there is also a requirement to train end users how to use the technology properly.

c. Structure

Like any military organization, the chain of command is the predominant reporting and discipline structure. Unlike the typical military chain of command, the TFSD is highly integrated in a horizontal fashion with the parallel CDD divisions, the various Advocates, and the inputs from the operational and supported elements.

According to Mintzberg's organizational configurations, the TFSD resembles both a machine and a professional bureaucracy. In machine bureaucracies, the technostructure is the key part of the organization. One way to look at the TFSD is as a representation of the technostructure of the entire Expeditionary Force Development System. They are the analysts who provide direct support, formal planning, and control of the work of others. The standardization of UNS, TOECRs, and troop-to-task analysis comes from the TFSD, who oversees, directs, and provides technical support to the

process. Like any other technostructure, they do not actually perform much of this work themselves, but train those who do and track its progress.

In professional bureaucracies, the operating core is the key part of the organization. The operating core consists of the workers who perform the basic goods and services of the organization and is by nature more decentralized than the machine bureaucracy. In addition to functioning as the technostructure to provide the technical support to the EFDS, the TFSD also has to operate as an operating core would function; as an organization of skilled professionals who must be given a considerable amount of autonomy over their analytical work. This aspect is exemplified through the TFSD's DOTMLPF working group responsibilities. The personnel of the TFSD need to function both as self-sufficient, highly trained force structure professionals and also as the technical oversight for key system products.

d. People

The TFSD's personnel come from a variety of different backgrounds and experience levels. While many have specialized training such as master's level degrees from the Naval Postgraduate School, many do not. Civilian personnel function to provide a necessary level of stability to the two to three year rotation most active duty personnel serve in the organization. Subject matter experts are so named for their MOS background experience, not their experience with the force structure process itself. Most training is thus on-the-job, as no formal school exists to specifically teach Marine Corps force structure processes. While some level of Mintzberg's standardization of skills exists in the form of training to use the computerized programs, there is no formalized standardization of analytical skills for conducting the tasks traditionally performed by an operating core. This is further exasperated by the technostructure's lack of formalized training for how to provide technical support to the troop-to-task analysis process. Those in the position to provide the training to the personnel required to actually do the work do not have sufficient technical training themselves.

e. Subsystems

According to Thompson's Typology, the TFSD can be placed somewhere between sequential and reciprocal interdependence. At times, interdependence is sequential, as one branch's outputs become another branch's inputs. At other times, the work is required to function with more expediency cooperation; thus becoming more interdependent. The coordination styles are likewise split. There is a certain amount of coordination by plan, as is specified in the TFSP and EFDS Orders and the internal TFSD Standard Operating Procedures. There also appears to be a high level of coordination by mutual adjustment with frequent interaction and feedback amongst the branches in individual personalities.

5. Culture

While details were not readily observable in the time allowed, the TFSD culture appears to be a general reflection of the larger USMC environment. Because of the number of different MOS backgrounds, the culture is presumably somewhat varied—standard for the typical Marine staff billet. Any potentially radical shifts in culture are most likely negated by the long term civilian leadership presence.

6. Outputs

Standardization of outputs is one of the primary functions the TFSD serves. Because the TFSD is tasked with managing the TFSMS and updating all affected Orders and publications, quality control of these outputs serves as an integral function for the entire Marine Corps. The one area of identifiable difficulty the TFSD has with product outputs is the development of training and technical oversight of the troop-to-task analysis to subordinate units in order to receive a more uniform and non-subjective analysis product.

7. Outcomes

The primary outcome of the TFSD is ultimately Marine Corps mission accomplishment. Without proper force structure supported by sufficient equipment, the Marine Corps cannot satisfactorily perform its missions. The TFSD contributes to this by providing a layer of analysis to the TFSP, acting as the force structure subject matter expert, serving as an integration unit between bottom-up and top-down requirements, and providing a prioritized list of force structure solutions to the MROC for approval by the Commandant.

C. EXAMINATION OF A TROOP-TO-TASK ANALYSIS

The following example is an actual troop-to-task analysis that was submitted by the Commanding Officer of the 31st Marine Expeditionary Unit (MEU), and endorsed by the Commanding General of III Marine Expeditionary Force (MEF), as a required attachment to an uncompensated structure request for the 2009 Uncompensated Review Board. Figure 12 is the Justification slide from the URB brief, which details the reasons why this force structure request should be filled. Table 3 is the product submitted for MET mapping per Example 1 of the troop-to-task analysis template found in MCO 5311.1D. Table 4 is the organizational structure per Example 2. For reference, a blank template as supplied by MCO 5311.1D is provided in Appendix C.



Justification

- 31st MEU maintains a consistently high operational tempo throughout the year.
- It annually conducts 2 full workup cycles with UDP units. Each workup cycle consists of the following: R2P2 training, Marine Expeditionary Unit Exercise (MEUEX), Realistic Urban Training Exercise (RUTEX), Blue/Green Amphibious Integration Training, Amphibious Ready Group Exercise (ARGEX), Evaluation Exercise (EVALEX) (formerly SOCEX)
- Additionally it participates in 4 international exercises on foreign soil annually. Those exercises are typically: Cobra Gold (February/Thailand), Foal Eagle (March/South Korea), Balikatan (April/Philippines), Talisman Saber (July/Australia), Philippine Bilateral Exercise (PHIBLEX) (October/Philippines), and Korean Integrated Training Package (KITP) (November/Korea)

May 09

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Figure 12. 31st MEU 2009 URB brief slide

31st MEU CE										Billets Required		Equipment Required	
Example TIT for GCE										DtD		DtD	
DtD = Day-to-Day													
CON = Contingency													
METL													
1. Responsible for planning future operations													
IMPLIED TASKS													
Plan Future Amphibious Raids, Plan for Non-combatant Evacuation Operations, Plan for Future Security Operations, Planning Future Security Operations, Plan for Tactical Recovery of Aircraft and Personnel, Plan for Direct Action													
# OF PERSONNEL	Alpha Grade	BMOS	PMOS	Billet Type	Manpower Type	Reserve Type	Billet Status	Branch Code					
1	Maj	CA	CA	O	A		A	M	(1) M9 PISTOL (E1250)				
										Billets Required			
										CON			
# OF PERSONNEL	Alpha Grade	BMOS	PMOS	Billet Type	Manpower Type	Reserve Type	Billet Status	Branch Code					
1	Maj	CA	CA	O	A		A	M	(1) M9 PISTOL (E1250)				

Figure 13. Example 1 from 31st MEU 2009 URB submission

Tab 2 - Organization

Unit Description	Alpha Grade	BAOCS	PHOS	BRN	TYP	STA	MEM	MIN	WE	CD
S-3 SECTION										
S-3 OFFICER	LTCOL	8007	0000 M	O	A	A	A			
ASST S-3 AIR LNO	CAPT	7502 7506N	0000 M	N	A	A	A			
CNO PLANNER	MAJ	0530 0500D	0000 M	O	A	A	A			
		0531 0521D								
CNO CHIEF	O190T	0511D	0000 M	E	A	A	A			
S-3 CHIEF	MCYSGT	0309	0000 M	E	A	A	A			
ASST S-3 FSGO OFF	MAJ	0602	0000 M	O	A	A	A			
ASST S-3 FSGO CHIEF	SSGT	0601	0000 M	E	A	A	A			
ADMIN CLERK DRIVER	LCPL	0151	0151 M	E	A	A	A			
ASST S-3 MO OFFICER	MAJ	0002 0510D	0000 M	O	A	A	A			
FORCE PROTECTION OFF	CAPT	0003	0000 M	O	A	A	A			
TARGETING OFFICER	1ST LT	0002	0000 M	O	A	A	A			
ASST AIR LNO	CAPT	7506	0000 M	N	A	A	A			
CBRN DEFENSE OFFICER	CHQ00	5702	5702 M	O	A	A	A			
CBRN DEFENSE CHIEF	SSGT	5711	5711 M	E	A	A	A			
ADMIN CLK	LCPL	0151	0151 M	E	A	A	A			
COMBAT VISUAL INFO CHIEF	O190T	4801	4801 M	E	A	A	A			
MAJITF PLANS CHIEF	SSGT	0511	0511 M	E	A	A	A			
MAJITF PLANS NCO	CPL	0511	0511 M	E	A	A	A			
AVOID OFFICER	CWO00	6502	6502 M	A	A	A	A			
FUTURE OPERATIONS OFFICER	MAJ	CA	CA M	O	A	A	A			
EQUIPMENT										
UT	Readiness	Eqpt	Type	Allow	CD	Issd Qty	Org Qty	Unit Qty	Auth Qty	Spd Qty
EA	R	0	0			13	13	13	1	
EA	R	0	0			3	3	3		
Associated Items										
Associated - T&MCS - Nonmodular										
19 (19) M8 PISTOL (E7006)										
1 (3) M4 RIFLE (E0106)										

Table 3. Example 2 from 31st MEU 2009 URB submission

Per MARADMIN 031/09, Policies and Procedures for the 2009 Uncompensated Review Board, requests were required to be signed by a three-star MARFOR Commander or three-star MAGTF Advocate and submissions were required to include a cover letter with justification for the identified capability gap and accompanied by a completed mission statement, initiative brief, and a troop-to-task analysis per the templates provided by the TFSD.

The purpose for requiring external units to submit a troop-to-task analysis with uncompensated structure requests is because the requesting unit presumably has the expertise and understanding with which to conduct a thorough analysis. Because this level of presumed expertise is not inherent within the TFSD, the TFSD relies on the thoroughness of the accompanying troop-to-task analysis with which to argue for and prioritize the multitude of requests it must evaluate during the URB process. For reference, the 2009 URB had 61 of these briefs to consider, each trying to present a case for why they should receive more force structure than the current Table of Organization and Equipment allows. It is presumably in the requester's best interest to make as strong an analytical argument as possible.

In this example from the 31st MEU, the request is only for one future operations officer (a major) to be able to better conduct future operations planning. It loosely follows the troop-to-task analysis guidance provided in MCO 5311.1D, first by identifying the unit's tasks as defined by the Mission Essential Task List. In this example, the task identified in the METL is "responsible for planning future operations". It then lists a number of implied tasks such as plan for future amphibious raids, plan for future security operations, etc and identifies a future operations officer as the billet that should be accomplishing these tasks. The troop-to-task analysis then performs the building of the new organization, based off Example 2 from the template, by developing a proposed organization that reflects the requested force structure change.

What does this troop-to-task analysis really accomplish? By perusing the submissions for the 2009 URB, it appears that some commands provided an analysis similar to the one detailed here, some have several analyses as the request is for multiple

units, tasks, and MOSs, and some did not appear to submit a troop-to-task analysis at all. So is the troop-to-task analysis a useful exercise, and if so, who should be performing them?

From external observation, it appears that while the troop-to-task analysis is typically completed as requested, it may not be fulfilling TFSD's intentions of providing a thorough analysis. An obvious omission in the current template is a format or instructions for how to divide tasks by the time it takes to complete them. In the 31st MEU future operations officer example, the analysis lists a number of implied tasks that are part of "plan for future operations". But it does not list any time requirements for which an individual is expected to be doing these tasks. There is also a lack of any justification given for the grade of major as requested. Instead of a thorough analysis, it appears that the requesting unit simply fulfilled the troop-to-task analysis template requirement by filling in "this is what I need and this is where I need it" without the complexity that may be desired by those who make future force structure decisions based partly from the enclosed troop-to-task analysis. On the other hand, if this is the level of complexity TFSD expects or requires, then the previously submitted troop-to-task analyses seem to be fulfilling that role.

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

Chapter II has described traditional systems theory and models that provided a common language and background for further Marine Corps systems analysis. The systems theory and models were followed by an abbreviated description of the entire Total Force Structure Process and how it fits into the bigger Capabilities Based Planning picture. Once the big picture view was presented it was followed by a description of the Total Force Structure Division's troop-to-task analysis process, a very narrow and specific TFSP product. Lastly, the TFSD was reexamined under the systems theory framework prior to the examination of an actual troop-to-task analysis presented per the requisite guidance to the 2009 Uncompensated Review Board.

The remainder of this thesis will detail conclusions that have been drawn from the prior lengthy qualitative process. Lastly, recommendations are provided, which are based from an examination of other troop-to-task analyses used by other very different organizations. These recommendations vary in complexity between maintaining the status quo and the development of an entirely new computer based troop-to-task analysis program.

B. CONCLUSIONS AND RECOMMENDATIONS

1. Conclusion 1

The Total Force Structure Division's troop-to-task analysis ultimately serves a small and very specific function within one sub process of the Total Force Structure Process. The need for conducting a troop-to-task analysis is referenced in only three sections of the entire MCO 5311.1D; either as a subcomponent of TFSD's analytical processes during the Uncompensated Review Board or as a tool with which MAGTF and Functional Advocates can systematically build manpower and the accompanying equipment requirements as capability gaps develop. In either of these scenarios, the troop-to-task process, as it is currently written, is rather ill defined and subjective by nature.

Course of Action (COA) 1

Maintain the status quo. The current guidance provided may be adequately serving the needs and intentions it is intended to serve. If the present level of subjectivity is acceptable, there are other methods of justification for uncompensated structure requests, such as the mission statements and contents of the URB briefs. The process of conducting a troop-to-task analysis may be useful in and of itself as a tool to further the justification process for the submitting unit.

2. Conclusion 2

The Marine Corps does not have a defined or doctrinally based troop-to-task process. Lacking such a process, the TFSD in the past few years has “borrowed” what has been developed so far by the Plans, Policies, and Operations (PP&O) Service Component Working Group (SCWG). It was this working group that contributed indirectly to the development of the troop-to-task template and instructions in Appendix L of MCO 5311.D. The TFSD also has a SCWG handout titled “MARFOR Troop-to-Task Analysis” that accompanied the URB troop-to-task template. However, the methodology detailed appears to be far beyond the scope of the average uncompensated structure request submitter.

Background⁵⁵

The National Plans Branch (PLN) of PP&O led a Service Component Review Group (SCRG) from 2006–2008. Its primary task was essentially to conduct a MARFOR wide troop-to-task analysis in order to assess the effectiveness of the Marine Corps service components and the MARFORs ability to perform their required tasks. Because no standardized methodology for conducting a troop-to-task analysis exists, the SCRG worked with the Center for Naval Analysis to review all MARFOR Tables of Organization and Equipment. The methodology that was developed had two main

⁵⁵ SCWG, “Service Component Working Group Overview,” PLN internal document.

shortcomings: 1. Inconsistency from each MARFOR as they developed their own list of required tasks, and 2. Insufficiency in method for prioritization of tasks to determine the efficiency of manpower resources.

The SCWG was tasked in 2009 to conduct another component review and address capability gaps that had been identified by the SCRG. Because of the problems with methodology that were highlighted during the first MARFOR troop-to-task analysis, the approved course of action with which to do this was to use a civilian contractor analysis tool for the cost of 250,000–400,000 dollars. The contractor chosen was WBB Consulting, who has been assisting the SCWG with its current troop-to-task analysis with the use of a proprietary data analysis tool called Workforce Analysis Tool (WAT). Figure 13 is a slide from the SCWG’s task analysis workshop conducted in February 2010. It provides a simple demonstration of what the WAT does, essentially computerized troop-to-task analysis using tasks (demand) as the primary analytical unit. Unfortunately, the contract is expected to expire once the SCWG has completed the current review. In conversation, the SCWG chair LtCol Albert Moseley has agreed that this propriety tool is the most functional troop-to-task analysis process that the Marine Corps has used. He laments that the contract will end without further support or funding as it is currently the only non-subjective analytical tool the Marine Corps has for conducting broad-scale troop-to-task analysis.⁵⁶

Course of Action 2

Incorporate what the SCRG accomplished during the 2006–2008 review by formulating a set of troop-to-task business rules. These business rules could consist of a standardized set of MAGTF level tasks, much like the SCRG’s “command level tasks” and standardized estimates of time allotted to complete them. Arguments for this COA would be to provide further instruction and standardization to the troop-to-task analysis process without having to resort to contractor provided support. Arguments against this

⁵⁶ LtCol Albert Moseley, telephone conversation, 12 February 2010.

COA are that it would be very time consuming few TFSD personnel resources to devote the amount of time it would require and it would not solve the same problems that the SCRG encountered. Figure 14 displays a Workforce AnalysisTool.

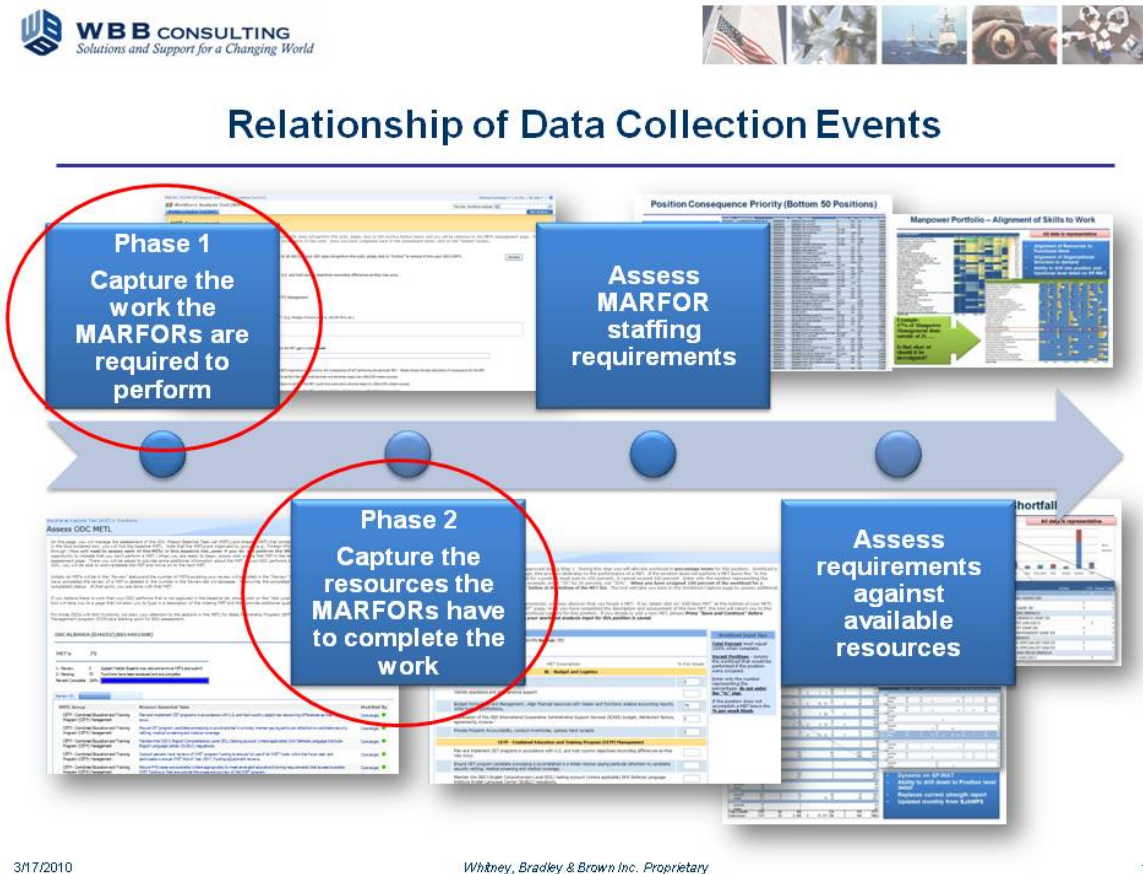


Figure 14. Function of the Workforce Analysis Tool (From PP&O Componentency Study Workshop Brief 2, 2010)

Course of Action 3

Use the chain of command to emphasize the importance of and garnish support for a Marine Corps wide troop-to-task analysis process in an effort to maintain and expand the work the PLN has already done. The WBB Consulting product is not the only product developing software tools for complicated analyses such as the military's troop-to-task requirements.

Another real-world product example is the North Atlantic Treaty Organization's (NATO) Tool for Operational Planning, Force Activation and Simulation (TOPFAS). TOPFAS is a planning and support data system that has been in development since at least the turn of the century. Primarily designed for NATO Strategic Commands, Combined Joint Planning Staff, Regional Commands, and other NATO military headquarters, it was launched to the operational community in 2008 and is currently in use in Afghanistan.⁵⁷ One of the key outputs of the TOPFAS program is the Statement of Requirement—a completed troop-to-task analysis. The Statement of Requirement is generated by selecting generic units, to which the program applies Troop-to-Task Rules (TTRs) that are a component of the TOPFAS database.⁵⁸ It is unclear at what level of development the TTRs are currently at, however this level of standardization will most likely become more common as the military environment becomes more jointly integrated. Figure 15 illustrates a TTR worksheet.

⁵⁷ NATO C3 Agency, "Annual Report 2008." (2008): 23.
[<http://www.nc3a.nato.int/Documents/Annual%20Report%202008.pdf>]. 26 February 2010.

⁵⁸ Hakon Thuve, "TOPFAS (Tool for Operational Planning, Force Activation and Simulation)." NATO (unk.): 14. [http://www.dodccrp.org/events/6th_ICCRTS/Tracks/Papers/Track4/127_tr4.pdf]. 6 January 2010.

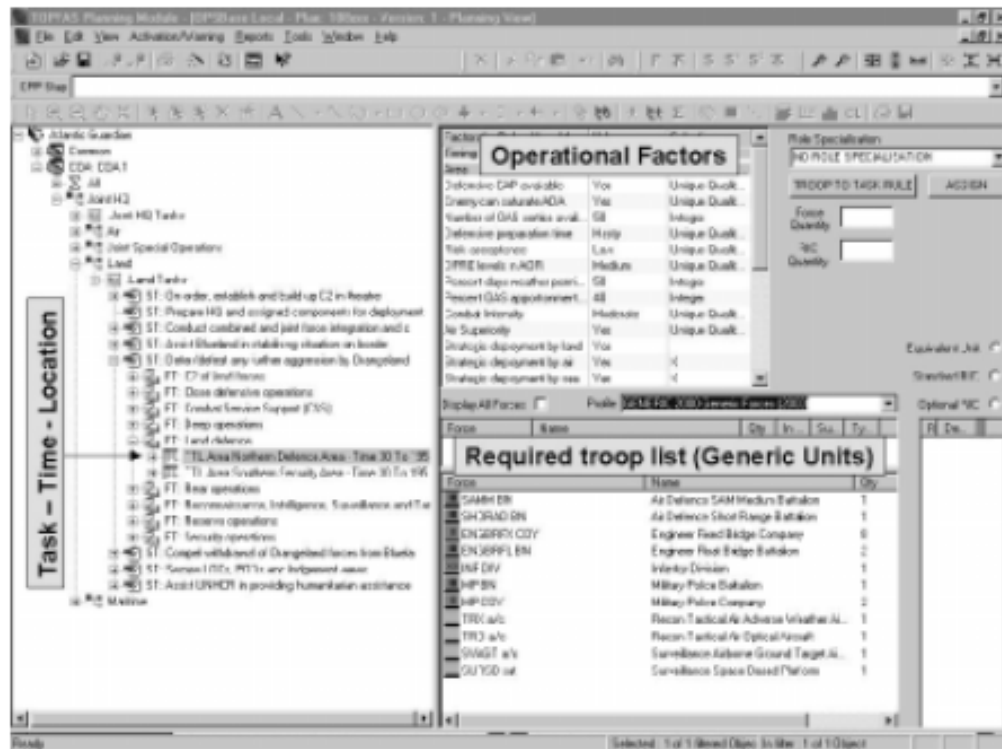


Figure 15. TOPFAS troop-to-task worksheet (From Thuve, 2010)

3. Conclusion 3

The Marine Corps does not have an identified analytical organization built into its force structure that prepares the documents and background analysis to support uncompensated force structure requests. If the request stems from a top-down gap identification, there is a staff that can function in the analysis role to provide some level of analytical background work. However, if an uncompensated request comes from a bottom-up identified gap, the operating forces do not have the luxury or often the background necessary to perform a detailed, thorough, and unbiased analysis.

Background⁵⁹

The Army capabilities based assessment process is composed of three phases and like the Marine Corps CBA includes a functional area analysis, a functional needs analysis, and a functional solutions analysis. The Army also has a process comparable to

⁵⁹ LTC (ret) David Retherford, AFMS Instructor, Ft. Belvoir, telephone interview, 16 March 2010.

the URB, called the Functional Design Update (FDU) process. Like the submission packet that comes with an uncompensated structure request, a number of justifications have to be submitted with each FDU organization change request. The FDU requires five parts in its packet: a letter signed by the Force Modernization Proponent CG, an organizational design paper, a concept paper, a Unit Reference Sheet that shows the current to proposed structure, and a standalone briefing for the reviewing board. Like the URB, these products are all sent to the Force Design Directorate before becoming official FDUs. These pre-FDU documents are prepared by a branch within a number of schoolhouses under the Training and Doctrine Command, such as air defense, armor, aviation, infantry, etc. The Branches are called Combat Development Integration Directorates (CDID), and appear to function much like the Marine Corps CDD Integration Divisions. The take-away distinction from Army force structure development is that the CDIDs are solely responsible for the DOTMLPF analysis and the five required analytical documents that are part of the pre-FDU packet. This process is distinctly different from the URB submissions that come from operation and supporting element commands of the Marine Corps. While the Army takes both top-down and bottom-up gap identification like the Marine Corp, only the centralized CDIDs process those uncompensated force structure requests. This presumably has two results: that the analysis packets, and thus the troop-to-task analyses, are more consistent and less subjective and that the process is not as expedient as when requests are received directly from the operating forces. A counterpoint to note, however, is that Army FDUs are bi-annual and thus a more frequent occurrence than the annual URB.

Course of Action 4

Develop the force structure necessary in the Total Force Structure Process that is trained and responsible for conducting more thorough and in depth analyses prior to uncompensated structure request review by the URB.

4. Conclusion 4

Unlike the Army Force Management School at Ft. Belvoir, there are no schoolhouses or coursework to teach the complicated, interconnected, and overlapping

processes of Marine Corps force structure and management. The NPS Manpower Systems Analysis curriculum is designed to serve this function; however, Marine officers at NPS have very little to no exposure to Marine Corps processes while pursuing Special Education Program degrees. Ultimately, a large percentage of pay-back billet education is still in the form of specialized on-the-job training.

Course of Action 5

Encourage the expansion of the Manpower Systems Analysis curriculum to incorporate essential elements of the Marine Corps framework into the existing Master's program, or add a separate manpower course for Marine Corps officers attending. Ensure that at least familiarization session(s) are available for Marine Corps students specifically addressing Marine Corps force structure and manpower management systems.

APPENDIX A. ORGANIZATIONAL CHARTS

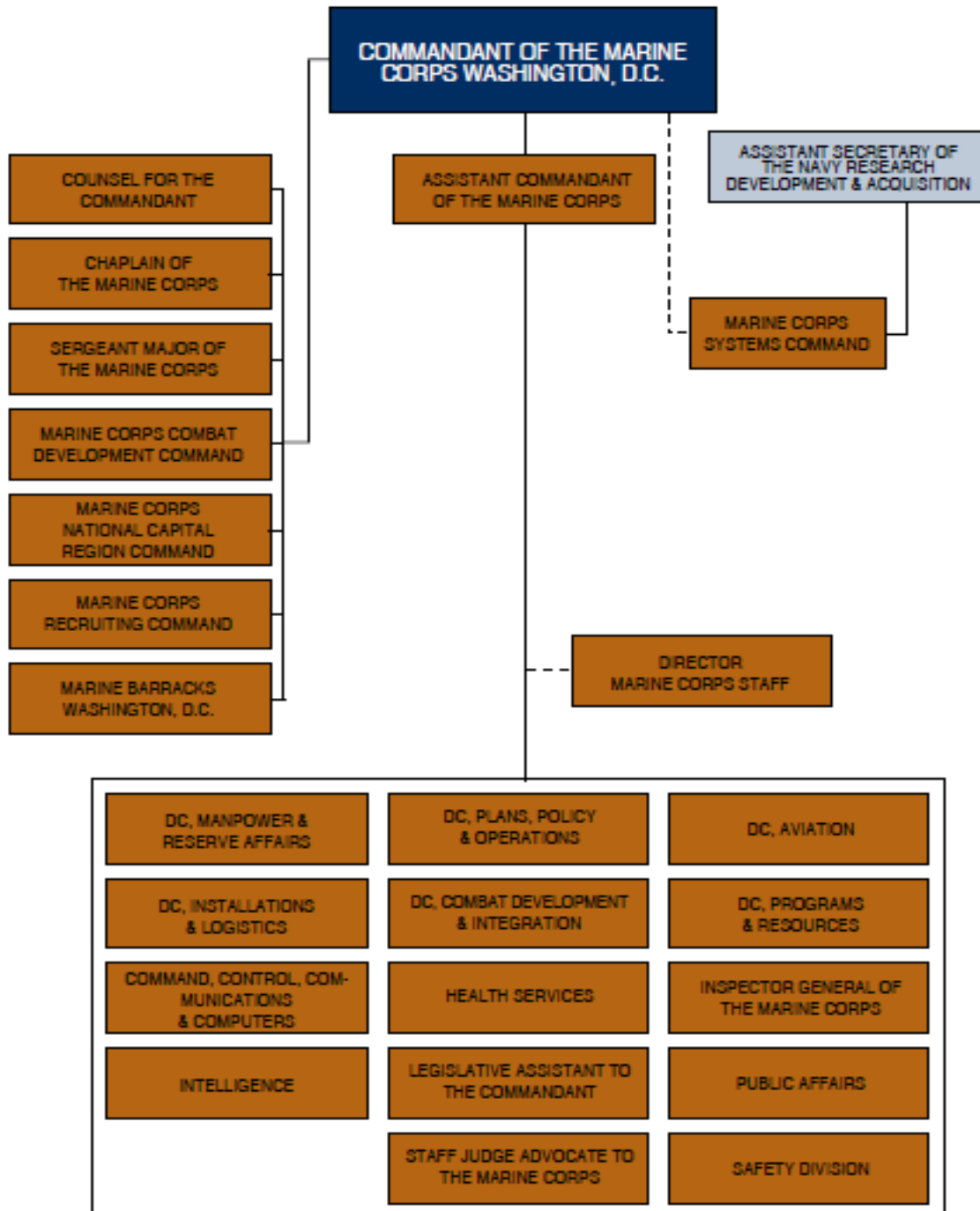


Figure 16. HQMC (From U.S. Marine Corps Concepts and Programs, 2009)

[illegible]

Figure 17. (From TFSD, 2009)

DC CD&I Organizational Chart

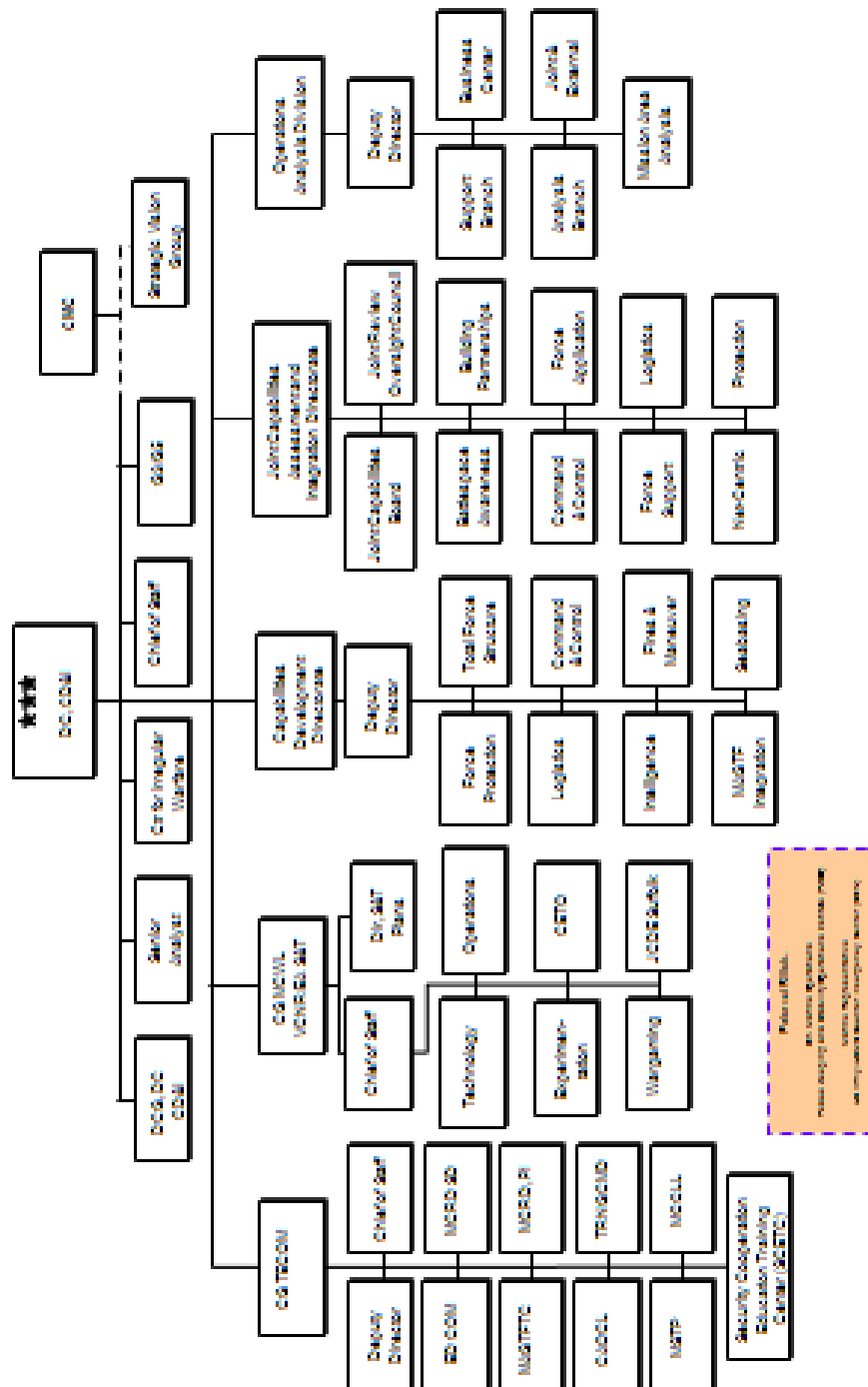


Figure 18. (From CDD brief, 2009)

Capabilities Development Directorate (CDD)

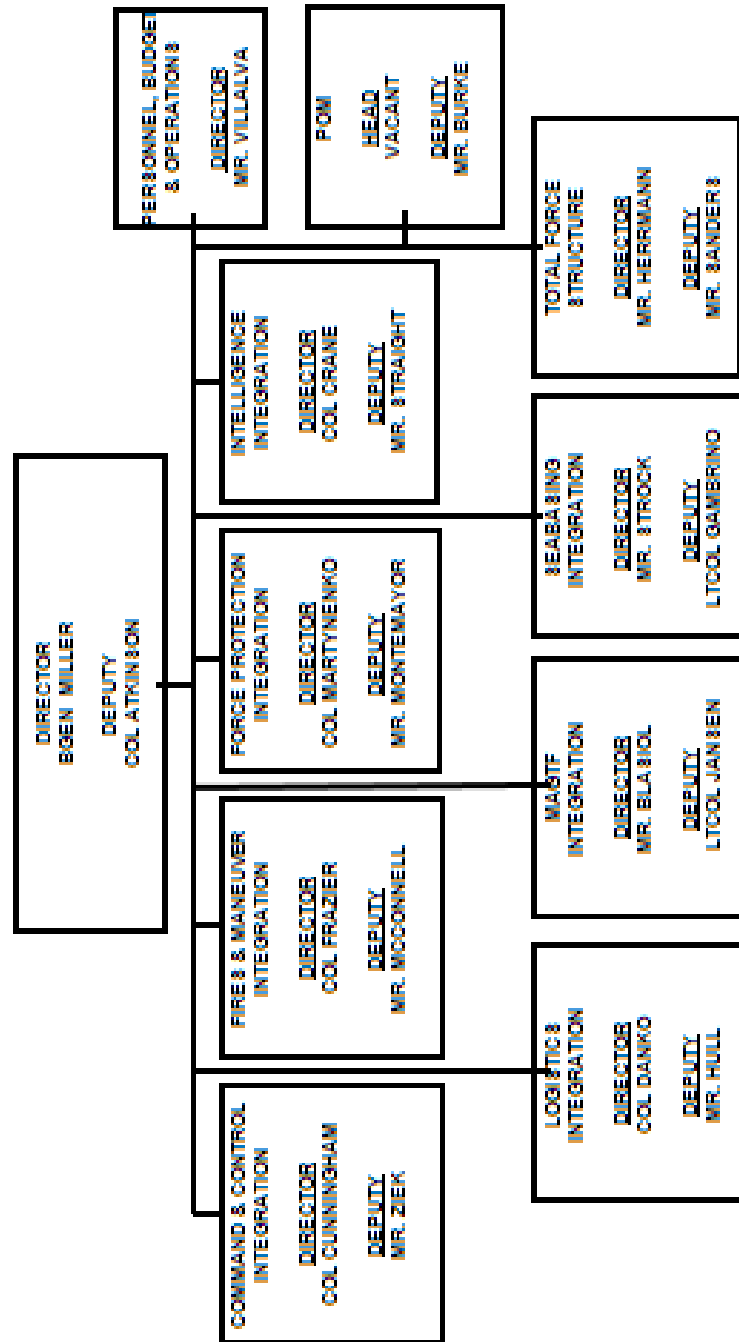


Figure 19. (From CDD brief, 2009)

TFSD Organization

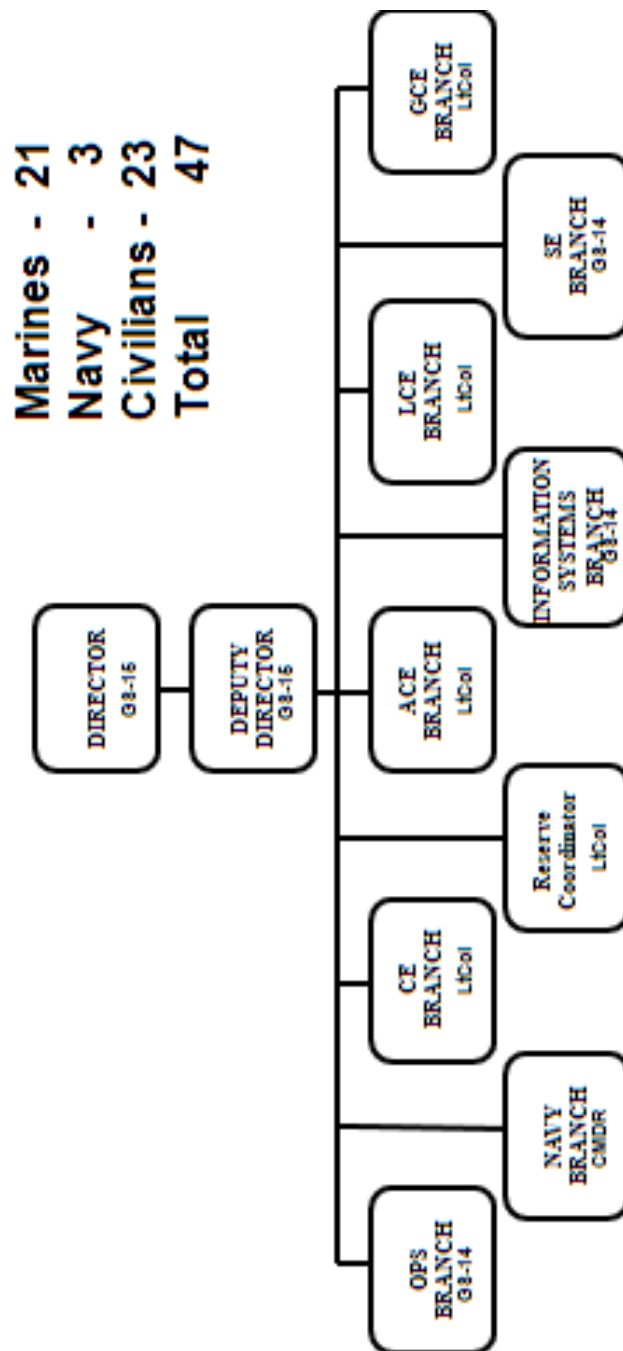


Figure 20. (From TFSD, 2008)

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APPENDIX B. TFSD UNS TEMPLATE

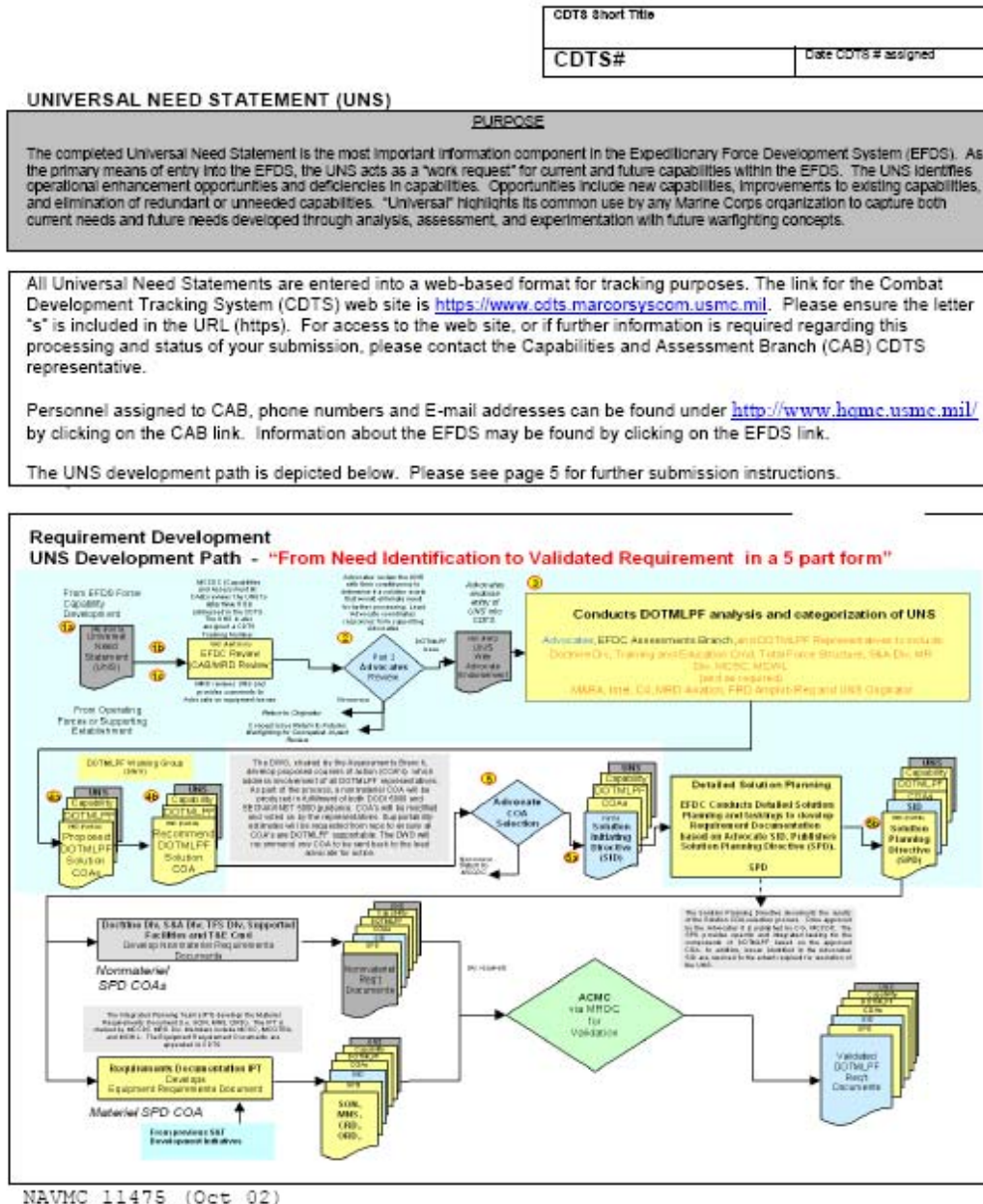


Figure 21. UNS Template, page 1

UNIVERSAL NEED STATEMENT (UNS) Part 1a of 5 - Originator's Request						COTS Short Title <hr/> COTS# Date COTS # assigned	
Name (Last, First, Initial)		Rank/Grade		Phone		FAX	
Available for phone or personal followup?		Interested in participation in Section Course of Action (PT)?		Request UNS status updated by email?		E-mail	RUC

Type of Need (select one that best describes the need)

ADD a new capability that does not exist	IMPROVE or FIX an existing capability	REMOVE an existing capability
--	---------------------------------------	-------------------------------

Description of Need Describe the nature of the need and the cause (if known). Explain how the need was identified (operational deployment, training exercise, experimentation, formal study, mission area analysis, observed operating deficiencies).

When Needed

URGENT	6 Months	1 Year	2 Years	5 Years	10 Years	Other (date)
--------	----------	--------	---------	---------	----------	--------------

Rationale Describe why the need requires resolution in timeframe selected (e.g., safety issues, Congressional mandate, etc.)

Figure 22. UNS Template, page 2

Describe mission or task to be accomplished that is related to the need.

--	--

Can you see the need to provide training to performance leaders or users?

[illegible]

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		CDTS Short Title	
		CDTS#	Date CDTS # assigned
Approval Authority – Regimental Level or as appropriate (Battalion, Squadron, etc.)			
Command	Name of Approval Authority (Last, First, Initial)		Rank/Grade
Mailing Address	Phone	FAX	
	E-mail		
	Date Received	Date Forwarded	
Approval Authority Comments (optional)			
Signature Block			

		CDTS Short Title	
		CDTS#	Date CDTS # assigned
Approval Authority – MEF Level or as appropriate (Division, Wing, Service Support Group, etc.)			
Command	Name of Approval Authority (Last, First, Initial)		Rank/Grade
Mailing Address	Phone	FAX	
	E-mail		
	Date Received	Date Forwarded	
Approval Authority Comments (optional)			
Signature Block			

		CDTS Short Title	
		CDTS#	Date CDTS # assigned
Approval Authority – MARFOR Level or as appropriate*			
Command	Name of Approval Authority (Last, First, Initial)		Rank/Grade
Mailing Address	Phone	FAX	
	E-mail		
	Date Received	Date Fwd'd to Assessment Btl, MCDC	
Approval Authority Comments (optional)			
General Officer's Signature Block			

Figure 24. UNS Template, page 4

1. Issues should be forwarded to CG MCCDC via respective chains of command.
2. Issues require one General Officer's signature (at any level i.e. MARFOR, MEF, Div/Wing/FSSG, etc.) to be processed. MARFOR endorsement may be Chief of Staff (COS). Endorsement may be Executive Assistant (EA) for Division within HQMC. **An UNS will not be accepted by MCCDC without the proper endorsement.**
3. A disk copy should be forwarded through the chain of command along with the hard copy in case changes need to be made.
4. Additionally, please forward an electronic copy to the Capabilities and Assessments Branch (CAB), EFDC, MCCDC. CAB will store this copy as a "warning order" until they receive the hard copy (routed through your chain of command) with a General Officer's signature.
5. Upon receipt of the hard copy, the UNS will be entered it into the Combat Development Tracking System (CDTS) and staffed for appropriate review. CAB will also send an "e-mail acknowledgement" to the originator. This e-mail will include an assigned CDTS Title and Identity Number for tracking purposes on the CDTS web site. Information concerning the routing process of the UNS can be viewed on the first page of this form.
6. The link for the Combat Development Tracking System (CDTS) web site is <https://www.cdts.marcorsyscom.usmc.mil>. Please ensure the letter "s" is included in the URL (https). For access to the web site, or if further information is required regarding this processing and status of your submission, please contact the Capabilities and Assessment Branch (CAB) CDTS representative.
7. Current personnel assigned to the CAB phone numbers, E-mail addresses may be found under <http://www.mccdc.usmc.mil/> by clicking on the Capabilities Assessment Branch link.

Part 1 – Page 5 of 5

NAVMC 11475 (Oct 02)

Figure 25. UNS Template, page 5(All images from <https://www.mccdc.usmc.mil/>, accessed 8 March 2010)

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APPENDIX C. TFSD TROOP-TO-TASK ANALYSIS TEMPLATE

Example 1:

Example TTT for GCE										
DID = Day-to-Day										
CON = Contingency										
Infantry Bn		Billets Required								
		DID								
METL	IMPLIED TASKS	# OF PERSONNEL	Alpha Grade	BMOS	PMOS	Billet Type	Manpower Type	Reserve Type	Billet Status	Branch Code
1. OPERATE A CDC										
	Conduct fire support planning	12	LCPL	0311	0311	E	A		A	M
		3	CAPT	0802	0802	O	A		A	M
		ETC...								
	Prepare for combat operations									
	Operate a command post									
	Conduct tactical logistics									
	Process casualties									
	Plan intelligence collection									
	Direct the intelligence effort									
	Participate in an amphibious assault									
	Employ Command, Control, Communications and Computers (C4)									
	Operate the Fire Support Coordination Center or equivalent									
	Conduct an amphibious assault									
		Billets Required								
		CON								
	IMPLIED TASKS	# OF PERSONNEL	Alpha Grade	BMOS	PMOS	Billet Type	Manpower Type	Reserve Type	Billet Status	Branch Code
	Conduct fire support planning									

Figure L-1.--Troop to Task Analysis Template

Figure 26. Troop-to-Task Analysis Template, page 1

	Prepare for combat operations									
	Operate a command post									
	Conduct tactical logistics									
	Process casualties									
	Plan intelligence collection									
	Direct the intelligence effort									
	Participate in an amphibious assault									
	Employ Command, Control, Communications and Computers (C4)									
	Operate the Fire Support Coordination Center or equivalent									
	Conduct an amphibious assault									
		Equipment Required								
	IMPLIED TASKS	DHD	CON							
	Conduct fire support planning									
	Prepare for combat operations	12 AXXXXXX (TAMCN)	12 AXXXXXX (TAMCN)							
	Operate a command post									
	Conduct tactical logistics									
	Process casualties									
	Plan intelligence collection									
	Direct the intelligence effort									
	Participate in an amphibious assault									

Figure L-1.--Troop to Task Analysis Template (Continued)

Figure 27. Troop-to-Task Analysis Template, page 2

	Employ Command, Control, Communications and Computers (C4)									
	Operate the Fire Support Coordination Center or equivalent									
	Conduct an amphibious assault									
2. Conduct Planning										

Example 2:

Billet Description	Alpha Grade	BMOS	PMOS	B R N	T Y P	S T A	Billet MNPWR CD
COMPANY HEADQUARTERS							
COMPANY COMMANDER	CAPT	0302	0302	M	O	A	A
EXECUTIVE OFFICER	1STLT	0302	0302	M	O	A	A
FIRST SERGEANT	1STSGT	8999	8999	M	E	A	A
GUNNERY SERGEANT	GYSGT	0369	0369	M	E	A	A
PROPERTY NCO	CPL	0311	0311	M	E	A	A
MESSENGER/DRIVER	PVT	0311	0311	M	E	A	A
WEAPONS PLATOON							

Figure L-1.--Troop to Task Analysis Template (Continued)

Figure 28. Troop-to-Task Analysis Template, page 3

EA	N	O		182	104	78		182			
EA	N	O		27	27			27	Replaced By	E11607G	SIGHT, NIGHT VISION, MINI 4.5X - AN/PVS17C
									Replaced By	E11627G	SIGHT, NIGHT VISION, MINI 2.25X - AN/PVS17B
									Replaced By	E11607GA	SIGHT, NIGHT VISION, MINI 4.5X - AN/PVS17C
EA	N	O		3		3		3			
EA	N	O		36	36			36			
EA	N	O		33	18	15		33			
EA	N	O		3	3			3			
EA	N	B		0				0			
EA	N	B	141	0		141		141			
EA	N	O		36		36		36			
EA	N	O		35		35		35			
EA	N	O		27		27		27			
EA	N	O		76		76		76			
EA	N	O		17	17			17			
EA	N	O		36	28	8		36	Used with(URI)	E09897M	MACHINE GUN, MEDIUM, 7.62MM, GROUND VERSION - M240B

Figure L-1.--Troop to Task Analysis Template (Continued)

Figure 29. Troop-to-Task Analysis Template, page 4

EA	R	O		0				0	Used with(UURI)	E09997M	MACHINE GUN, CAL .50, HVY BARREL (UGWS) - M2
									Used with(UURI)	E09907M	MACHINE GUN, CAL .50 - M3P
									Used with(UURI)	E09947M	MACHINE GUN, 40MM - MK19 MOD3
EA	N	O		1	1			1			

Figure L-1.--Troop to Task Analysis Template (Continued)

Figure 30. Troop-to-Task Analysis Template, page 5(All images from MCO 5311.1D)

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APPENDIX D. UNCOMPENSATED STRUCTURE REQUEST TEMPLATE

Unit letter head

TO REPLY REFER TO:
5311
SSIC
16 Jan 09

From: MARFOR or MAGTF ADVOCATE
To: Uncompensated Review Board (URB)
Via: Total Force Structure Division (TFSD)

Subj: COVER LETTER WITH UNCOMPENSATED JUSTIFICATION

Ref: (a) MCO 5311.C
(b) MARADMIN 031/09

Encl: (1) Initiative brief template
(2) Mission Statement template
(3) Troop to Task Analysis template

1. Purpose. This document is signed and approved by (the MAGTF Advocate / MARFOR Commander). It contains a list of uncompensated / compensated request with justification for the URB. Enclosures 1 and 2 are provided and required for the URB.

2. Uncompensated Request. We are requesting the following uncompensated structure;

a.

b.

3. Justification. Our justification is as follows;

a.

b.

4. Planning consideration. Our planning considerations are as follows;

a.

b.

5. Recommended Compensation. We are submitting the following uncompensated structure;

Figure 31. Uncompensated Structure Request Template, page 1

- a.
- b.
- 6. Implementation Strategy. Our implementation strategy is;
 - a.
 - b.
- 7. Point of contact for this cover letter/justification is Col I.
M. Marine (703) 784-xxxx.

3 STAR SIGNATURE

Figure 32. Uncompensated Force Structure Request Template, page 2(Both images from TFSD, 2009)

APPENDIX E. MISSION STATEMENT TEMPLATE



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

TO BE REPEATED TO:

12 PITCH; COURIER NEW

UNIT IDENTIFICATION
CODE.....M3000

UNIT NAME, ORGANIZATIONAL
HEIRACHY (WHO DO THEY WORK FOR)

1. PROMULGATION STATEMENT. This Mission Statement prescribes the organizational structure, billet authorization, personnel strength, and individual weapons for the.....

2. ORGANIZATION. Identify here the major sub-elements of the organisation being defined. Organisational Elements should be consistent with those contained within the Table of Organisation.

3. MISSION AND TASKS

a. Mission. The mission statement is a concise statement of the unit's war-fighting responsibilities in relation to other organisations and it describes the unit's role in support of the Marine Air-Ground Task Force (MAGTF), Supporting Establishment and Joint Operations. This paragraph should speak to such questions as "Who, What, When, Where and Why."

b. Tasks. These are specific statements that address the "how" part of the mission statement. It speaks to the wartime functions for which the unit is responsible for conducting. List tasks normally assigned to sub-elements in separate, numbered subparagraphs. Tasks must be delineated with enough specificity to ensure that all sub-elements of an organization are justified. Tasks will be listed in order of priority or accomplishment. Tasks must not be too detailed as to degrade commander's flexibility. Tasks need to complement the unit's Mission Essential Task List (METLs), Training and Readiness Manuals, (if applicable) and doctrinal publications.

4. CONCEPT OF ORGANIZATION. Describe in detail how the unit is organized to accomplish its wartime mission. Provide a general description of how the unit will organize, deploy, employ, and sustain forces to accomplish the mission. It should include a narrative of actions the unit will likely perform. Include as appropriate task organization, detachments, required augmentation, reserve requirements, etc.

5. CONCEPT OF EMPLOYMENT. Document the operational capabilities of the unit in terms of the six major war-fighting functions: Maneuver, Intelligence, Fires, Logistics, Command and Control and

Figure 33. Mission Statement Template, page 1

Force Protection. Specify if those primary functions are performed by other organizations or not applicable to that unit. Emphasis is upon wartime capabilities, what the unit brings to the fight and how it meets the objectives of the Force Commander. As the fifth element of the MAGTF, all supporting establishment units will include the following statement under this paragraph: Provide individual augmentation to Marine Corps Operating Forces to meet operational contingencies.

6. ADMINISTRATIVE CAPABILITIES. State whether administration is organic or from what organization administrative support will be received. (For example: Personnel administration is conducted at the Consolidated Personnel Administrative Center (CPAC)).

7. LOGISTIC CAPABILITIES. This addresses internal logistic capabilities (to include aviation logistic capabilities) and a unit's ability to sustain itself. If a paragraph does not apply, put the word "None" after the paragraph title.

a. Maintenance. State whether maintenance is organic or from what organization maintenance support will be received. Ensure that level of maintenance authorized is specified.

b. Supply. State whether supply is organic to the unit, or state from what organization supply support will be received.

c. Transportation. State whether transportation is organic to the unit, or state from what organization transportation support will be received.

d. General Engineering. State whether engineering is organic to the unit, or state from what organization engineering support will be received.

e. Health Services. State whether health services are organic to the unit, or state from what organization health service support will be received.

f. Services. State whether general services are organic to the unit, or state from what organization general services support will be received.

g. Messing. State whether messing is organic to the unit, or state from what organization messing support will be received..

Figure 34. Mission Statement Template, page 2

8. COMMAND AND SIGNAL

a. Command Relationships. Provide a general narrative describing the unit's command relationships and, if applicable, existing memorandums of understanding or those that require development.

b. Communications and Information Systems. Provide a general narrative describing the unit's concept for the communications and information systems. Highlight any communication or information system procedure or restriction requiring special emphasis.

9. SUPERSESSION. Insert the statement "This Mission Statement supersedes the previous Mission Statement of date and is effective upon receipt." or "This is a new Mission Statement and is effective upon receipt."

SIGNATURE BLOCK
General, U.S. Marine Corps
Commandant of the Marine Corps

Figure 35. Mission Statement Template, page 3(All images from MCO 5311.1D)

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LIST OF REFERENCES

AR 71-11, Total Army Analysis.

Army Force Management School, Ft. Belvoir, "Total Army Analysis (TAA) Primer 2009" [<http://www.afms1.belvoir.army.mil/>]. (accessed 9 January 2010).

Army War College "How the Army Runs".
[[http://www.afms1.belvoir.army.mil/pages/primers/htar2009\(final\).pdf](http://www.afms1.belvoir.army.mil/pages/primers/htar2009(final).pdf)].
(accessed 9 January 2010).

Brook, Douglas. 2009. "Introduction to PPBES" GB4053, Graduate School of Business and Public Policy. Naval Postgraduate School, Lecture 6-1.

Bruner, Bradley D. 2008. "An Organizational Analysis of the Military (Navy) Personnel Plans and Policy Division (N13)," Master's thesis, Naval Postgraduate School.

Cheek, Cynthia. TFSD, personal interviews, 5-7 January 2010.

CMC Policy Memorandum 01-08.

CMC Policy Memorandum 1-02.

Fitzgerald, Sheryl. "Manpower 101 Brief," M&RA Internal Brief, 19 March 2009.

Herrmann, Kevin. TFSD, personal interviews, 5-7 January 2010.

Hill, Tiffany. 2008. "An Analysis of the Organizational Structures Supporting PPBE within the Military Departments," thesis, Naval Postgraduate School.

Hoffman, Major Joel. TFSD, personal and telephone interviews, 5 January 2010-16 March 2010.

Keidel, Robert W. 1984. "Baseball, Football, And Basketball: Models for Business." *Organizational Dynamics* 12 no. 3: 4-18.

Lorino, Lisa. 2006. "United States Marine Corps' PPBE A Process in Change" GB4053, Graduate School of Business and Public Policy, paper, Naval Postgraduate School.

MARADMIN 621/05, DC CDI Reorganization.

MARADMIN 031/09, Policies and Procedures for the 2009 Uncompensated Review Board (URB).

MARADMIN 409/09, Civilian Manpower Requirements (Change 1).

- MCO 3900.15B, Marine Corps Expeditionary Force Development System.
- MCO 5311.1D, Total Force Structure Process.
- MCO 1200.17A, Military Occupational Specialty (MOS) Manual.
- Mintzberg, Henry. 1981. "Organizational design: fashion or fit?" *Harvard Business Review* 59, no. 1.
- . 1980. "Structure in 5's: A Synthesis of the Research on Organizational Design." *Management Science* 26, no. 3: 322–339.
- . 1980. [<http://www.mintzberg.org/about.htm>] (accessed 12 January 2010).
- Moseley, LtCol Albert. PP&O, telephone interview, 12 February 2010.
- Nadler, David A and Tushman, Michael L. "Organization, Congruence, and Effectiveness." *Organizational Dynamics* 9 no. 2 (1980): 35–51.
- NATO C3 Agency, "Annual Report 2008" (2008): 23.
[<http://www.nc3a.nato.int/Documents/Annual%20Report%202008.pdf>].
(accessed 26 February, 2010).
- Ramsey, Maj. Bill. TFSD, personal interviews, 5–7 January 2010.
- Retherford, David. Army Force Management School Instructor, Ft. Belvoir, telephone interview, 16 March 2010.
- . "Organizational Design and Development in the Force Design Process," AFMS, Ft. Belvoir, Lecture, dated September 2009.
- Roberts, Nancy. 2000. "The Systems Model," Naval Postgraduate School.
- Rowlett, Capt James. TFSD, personal interviews, 5–7 January 2010.
- Sanders, Capt Shawn. TFSD, personal interviews, 5–7 January 2010.
- Sanders, Lonnie. "TFSD Overview," TFSD Internal Brief, dated 13 September 2008.
- . TFSD, personal interviews, 5–7 January 2010.
- SCWG, "Service Componentency Working Group (SCWG) Overview," PLN internal document.
- Smit, Marcel. "NATO RTG SAS-045 on Computer Based Decision Support Tool for Helicopter Mission Planning in Disaster Relief and Military Operations". NATO (unk). [<http://ftp.rta.nato.int/public/PubFullText/RTO/TR/RTO-TR-SAS-045/TR-SAS-045-ANN-D.pdf>]. (accessed 9 March 2010).

TFSD, "MARFOR Troop-to-Task Analysis," internal document, dated 27 February 2007.

Thompson, James D. 1976. *Organizations and Beyond*. ed. William A. Rushing, Mayer N. Zald. D.C.: Heath and Company.

Thuve, Hakon. "TOPFAS (Tool for Operational Planning, Force Activation and Simulation." NATO (unk.): 1–15.
[http://www.dodccrp.org/events/6th_ICCRTS/Tracks/Papers/Track4/127_tr4.pdf.]
(accessed 6 January 2010).

United States Marine Corps, Marine Corps Combat Development Command Web site,
[<https://www.mccdc.usmc.mil/>] (accessed 19 March 2010).

Wardman, Maj. Gregory. TFSD, personal interviews, 5–7 January 2010.

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Camp Pendleton, California
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